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Thirteenth Report

of the

Bureau of

Agriculture Labor and Industry

of the

State of Montana

For the Years 1911 and 1912

"INDEPENDENT PUBLISHING COMPANY, HELENA, MONTANA."

STATE OF MONTANA,
BUREAU OF AGRICULTURE, LABOR AND INDUSTRY.

Helena, Montana, March 6, 1913.

To His Excellency,
SAMUEL V. STEWART,
Governor of Montana.

Sir: In compliance with the laws of Montana, we have the honor to transmit herewith the Thirteenth Report of the Bureau of Agriculture, Labor and Industry which is also the Seventh Biennial Report. Previous to 1900 the reports were made annually.

With the exception of material not available at the time of his resignation, the report was compiled under the administration of Hon. J. H. Hall, who resigned as Commissioner of the Bureau on January 6, 1913, to assume the duties of his office as Railroad Commissioner.

The 13th Legislative Assembly abolished this Bureau, creating in its stead two Departments, one of Agriculture and Publicity and the other of Labor and Industry. Therefore, this is the last Report of the Bureau of Agriculture, Labor and Industry.

Respectfully submitted,
J. H. HALL, Commissioner,
March 4, 1909, to January 6, 1913.
M. L. RICKMAN, Commissioner,
January 6, 1913, to March 6, 1913.

State Capitol, Helena, Montana.

NOT USE

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INTRODUCTION.

"Two years ago the Great Northern railroad hauled 250 carloads of grain from Montana; this year it is estimated that the road will haul 10,000 carloads of grain from Montana," said James J. Hill at a banquet of St. Paul business men, given in October, 1912.

This statement illustrates in a great striking way the wonderful growth the agricultural industry has made in the last two years. On other railroads grain shipments have also increased remarkably. Interesting as bringing to public notice Montana's entrance into the group of great grain producing states of the Union, these facts have an added significance when it is remembered that only one fifteenth of the arable land of the state is in cultivation, and that millions of acres in a virgin state are as fertile as those acres whose production in 1912 has astonished the world.

Settlers are needed to develop these virgin farm lands, and many agencies are cooperating, with conspicuous success, to make known to homeseekers the unequalled advantages Montana has to offer them. The publicity work of the State of Montana conducted by this Bureau has been limited by the meagerness of the appropriation made for the purpose, but directly and indirectly has been the means of attracting thousands of settlers to Montana. During the last two years thirteen thousand four hundred inquiries have been received and answered. The newspapers have done very effective work in making known the advantages of the state and many counties and communities have issued publicity pamphlets. The three transcontinental railroad companies whose lines cross the state have conducted costly and intelligent campaigns of publicity; including the sending through the central and western states of cars loaded with Montana products accompanied by competent lecturers. Excellent results have followed this effective method of making known the advantages of the state. Counties and communities have exhibited at the land products expositions held at New York and St. Paul, and individuals and companies exhibited at other places. Montana products were seen and admired by hundreds of thousands who visited the expositions and were awarded many prizes. At the Northwestern Land Products Show held at St. Paul in 1911, the Montana exhibit which had been hastily collected and entered by the Commissioner of the State Bureau of Agriculture, Labor and Industry, the expense being borne by various counties, communities, and individuals, no state funds being available for the purpose, was awarded a large and beautiful silver cup for "the best quality of samples and the best arranged exhibit." But for the generosity of individuals and the public spirit of the county commissioners Montana would have been deprived of the opportunity of making an exhibit at this great exposition and of getting the valuable advertising that resulted from the winning of the cup in competition with other states of the Northwest.

Montana also derived much publicity from the novel tour of the country

Cup Awarded to the State of Montana for the State Exhibit,
Entered by J. H. Hall, Commissioner of the Bureau of A., L., I. and P

taken in the fall of 1911 by the Governors of the Western States. The purpose of the tour was to make known to homeseekers in the East the advantages of the western states without emphasizing the superior attractions of any one, yet the great size of Montana, the superiority of its products, the vast area of fertile land that awaited settlement, combined with the complete knowledge of conditions, the unbounded enthusiasm and convincing eloquence with which Governor Norris spoke of the West and of the undeveloped resources of the great state of which he was the executive, perhaps caused Montana to derive more benefit from the Western Governors Tour than any other state.

The publicity work of this bureau has been an important factor in bringing about the increase in the selling and rental value of state lands that has taken place in the last four years, and in this way alone the state has been benefitted many times its cost.

The relations of the office with other agencies that are giving publicity to Montana have been harmonious and there has been mutual cooperation and assistance; but, nevertheless, the state bureau has been the only agency of publicity which has not limited its efforts to a particular district or section, which has tried to be of service to every part of the state, and which, because it has no land to sell and no selfish interest to serve, has become recognized as occupying a position different from that of any other publicity organization. The need for such an agency has been proved; and because it is a disinterested authority it has frequently been called up to pass upon the reliability of statements put out by private persons or by land companies. Seldom have overstatements of facts been found; exaggeration is as a rule scrupulously avoided; and the truth about the productiveness of Montana's soil is so amazing that dwellers in less favored regions hesitate to believe it At every exposition at which Montana products have been exhibited; visitors have been "shown," and the message this office sends to all inquirers is, "Come and with your own eyes behold Marvelous Montana."

Agriculture, industry and labor are subjects related more or less closely; and many statistics and observations bearing upon these general subjects, as well as others intended to give publicity to the advantages Montana has to offer to the homeseeker, will be found in the following pages.

The Land of Opportunity.

Montana lies between the 104th and 116th meridians of longitude west of Greenwich and between the 45th and 49th parallels of north latitude. The western boundary follows the Coeur d' Alene and Bitter Root mountains and is irregular; in the southwest corner the line dips below the 45th parallel and follows the main range of the Rocky Mountains; the northern boundary is along the 49th parallel and the eastern boundary the 104th degree of longitude. It is bounded on the north by the Canadian provinces of Saskatchewan, Alberta and British Columbia; on the east by North Dakota and South Dakota; on the south by Wyoming and Idaho; and on the west by Idaho. Its average length from east to west is about 535 miles, and its average width from north to south is about 275 miles. It is the third state in size, only california and Texas being larger; France and Germany is each only about one third larger. England, Wales, Scotland and Ireland combined have fewer square miles of territory; it embraces a greater area than all the New England states, New York, New Jersey, Delaware and Maryland added together; and there are counties in Montana larger than some of the populous states of the Union.

In this great extent of territory there dwelt when the census of 1910 was taken only 376,053 persons; and the population may have increased to 500,000 in 1912. Why does so small a population inhabit a country that has more and better agricultural lands than the state of Iowa and which compares favorably in natural resources, save only convenience to ocean transportation, to Great Britain and Ireland, to France and to Germany? At some time in the remote future Montana may support a population as great as is that of the United Kingdom at present; and even the thought of this possibility forces inquiry into the natural resources of the state and a comparison of them with those of other states and other countries. Speculations as to what Montana will be in the distant future will not here be indulged in, but the question may be asked why in this age of land hunger and rapid movement of population into new lands Montana had in 1910 only 376,000 inhabitants when with inferior resources Oklahoma had 1,657,155 and Iowa 2,224,771? Agricultural production sustains the population of these two great states, yet Montana has more and better farm lands than either.

In 1911 the acreage in corn, cotton, flax, wheat, oats, barley, rye, hay and potatoes in Oklahoma were 11,611,000 and the value of the crop $96,404,000. Cotton is not an Iowa crop, and the acreage in corn, flax, wheat, oats, barley, rye, hay and potatoes in Iowa were 19,407,000, of the value of $275,572,000. The acreage in Montana for the same year of corn, flax, wheat, oats barley, rye, hay and potatoes were 1,977,000 of the value of $40,257,000. These figures have been compiled from the Year Book of the Department of Agriculture for 1911. The average value per acre of all crops named was:

in Oklahoma $8.30, in Iowa $14.20 and in Montana $20.36. The Oklahoma acres yielded crops worth $96,404,000. Montana has more arable land than Oklahoma; and if the same number of acres had been cultivated in Montana the crops would have been worth $236,399,000. a difference of 145 per cent over the production of Oklahoma. Iowa is a large state and one of the most fertile; yet Montana, not counting two-thirds of its area which embrace the grazing lands and the mountainous, forested and mineral lands, has more arable acres than Iowa. If Montana had had in cultivation in 1911 as many acres in the crops named as Iowa, and they had yielded the Iowa average, the product would have been $275,572,000; but if the estimate is made on the Montana average yield for the same crops, the same acreage would have yielded $395,326,520. The superior productiveness of Montana's soil is shown by the difference in its favor of $119,754,520. Iowa is a state that has long been settled; but Oklahoma is younger than Montana and its rapid development, one of the remarkable events of the last two decades, shows how quickly good land will become occupied when thrown open to settlement and its advantages made known. In these modern times when land seekers are so numerous and when railroad transportation makes easy the movement of population, a new country may be peopled ten times as quickly as in former years. For these reasons the unoccupied acres in Montana will soon be settled upon; but it is now in the stage of development that Iowa was when one-tenth of its present cultivated acreage was producing crops. Acre for acre, Montana farms produce more than Iowa farms, and of the 30,000,000 acres of farm lands in the state, 28,000,000 were not cultivated, in 1911, according to the government statistics. The farm lands of Montana will have to undergo a great development before the crops will equal in value those of Iowa; a start has, however been made; the acreage in crops shows a remarkable increase each year; and the percentage of gain, if kept up for a few years more, will put Montana among the states that lead in yearly value of farm products. If one-half of the 30,000,000 acres of arable land that are in Montana were all in cultivation and the yield per acre were the same as from those that were cultivated in 1911, the annual value of the crop would be $303,900,000; and if the whole were producing at the same rate, the value of the crops would be $607,800,000.

Speculations such as these may seem idle at a time when the development of Montana's agricultural resources has scarcely begun; but they may serve to draw attention to the great extent and productiveness of the farm lands of the state; and it is possible that when Iowa numbered only 376,000 inhabitants none was bold enough to predict that the crops of the state would ever reach an annual value of $275,000,000. In confident expectation that the future will fulfill his most sanguine hope the optimistic Montanian is earnestly working for that result. Possessing the acres, the soil and the climate to assure the production of crops in vast quantities, Montana needs only the necessary number of tillers of the soil to achieve its destiny as one of the most productive farming regions on earth.

The postponement of the settlement of the agricultural lands of Montana until the present generation after lands east, north, south and west of less

productiveness have been settled upon, was fortunate for the land seekers of today. It was caused by the people of the state devoting themselves to mining and stock raising, both notably successful industries, to the presence of free public land and cheap deeded land nearer to the older states; and perhaps more than to any other cause the failure to make known to the world the excellence of the climate and the wonderful fertility of the soil of Montana. False impressions of the character of the country and false notions of the climatic conditions that prevail have slowly given way before incontrovertible facts; and every disinterested observer who visits the state, sees the crops growing or being harvested and experiences the delightful weather that usually prevails, goes away and bears willing testimony to the desirableness of the climate and the wonderful productiveness of the soil. Millions of acres of fertile, virgin farm lands are here; and here are opportunities for the energetic, industrious and intelligent tiller of the soil, who has means enough to get started, to acquire in a few years an independence that he could not attain in a life time in a less favored region. Why do men continue as renters of high priced lands year after year without getting ahead when better land may become their own in fee at the cost the rental they yearly pay? Why do not more owners of land of high selling value in the Mississippi Valley follow the example of the many settlers who have come into Montana from that section and bought at small cost lands as fertile as any in the state they have moved from? The salaried man or the worker for wages who finds it almost impossible to get ahead in cities has in Montana the opportunity to become a land owner and his own boss. Montana offers nothing to the drone or the incapable; but there are millions of acres of raw lands that are capable of producing abundant crops that may be earned by complying with the easy conditions of the homestead law or purchased at low prices. The highest priced lands are cheap when estimated on their income yielding value; and there are districts in which certain products grow to the perfection they reach nowhere else in the world and where lands will rise to a value that would now seem incredible.

Montana contains the only large area of fertile lands in the United States that has not been settled upon, the last of the good free public lands in the United States; when they are settled the area of cheap land in this country will have passed forever. Thousands of land seekers have heard of the fertile prairie and bench lands of Montana and have made homes on them; thousands of others are coming in the spring; the first comers have the better chance to settle near existing railroad lines, but there is room for hundreds of thousands of families; and that many miles of railroad will be built in the next few years through districts now remote from transportation facilities may confidently be predicted.

Scarcely less marvelous than the growth in the development of material resources has been the increase in church organizations, church membership, in hospitals, asylums, benevolent and social associations. The Montana of the dime novel, the eastern magazine writer, and the moving picture playwright never existed; whatever of rawness existed in early days has

passed away; crime is rare, and life and property are safer than in the great cities of the country and in many of the older states. Paupers are few.

From the earliest days the value of education has been appreciated and public and private schools have always been well supported. The higher institutions of learning are of such excellence that no Montana youth has to leave the state to obtain a collegiate education or to enjoy the advantages of the university.

The public school system is well organized and efficient. Illiteracy is almost unknown. Liberal support is given to the public schools; new districts are formed and new schools established as soon as the need for them becomes apparent; in all populous places are high schools and at most of the county seats county high schools. At the summit of the educational system are the Montana State College of Agriculture and Mechanic Arts at Bozeman, and the University of Montana at Missoula. The State Normal College at Dillon and the State School of Mines at Butte, are technical schools of proved merit. The great quantity of land granted by the United States to the State of Montana for educational purposes, constitutes a splendid endowment which is being wisely administered and conserved. Already it yields annually large sums for the support of the public schools and is becoming every year of greater value as the population and the demand for land increases. The proceeds of the sale of the school lands or the lands themselves will in the future years form an educational fund of immense value.

The sterling qualities of the pioneers gave a tone to the citizenship of the community that still persists. Montana is "the Treasure State" not alone because of the possession of natural resources almost unequalled in variety and extent, but because of the character of its citizens and the conditions that create an environment favorable to the development of a strong, healthy, moral, brave and prosperous people. Hon. Frank Hanly, of Indiana, after visiting several parts of the state, said at Havre:

"I have been most favorably impressed by my visit, not only with the country and its latent possibilities in the way of farming, stock-growing and horticulture, but especially with the character of the people. They are an enterprising lot and their efforts will soon be crowned with a measure of success beyond their hopes and aspirations."

Charles W. Fairbanks, formerly vice-president of the United States, said at Helena, November 15, 1911:

"This high altitude was intended for a virile people. These matchless resources which were scattered by the Omnipotent Hand hereabouts, were intended to invite hither to utilize them a courageous, hardy, intelligent population—home-makers, nation-builders. These hight altitudes should develop a sound and sane citizenship, uncontaminated with pessimism, which is propogated in miasmatic swamps of congested centers. The air of Montana should be hospitable to the best there is in American life.

"Montana holds an honorable place upon the map of the United States. What she is in material, intellectual and moral strength is prophetic of her future greatness, far beyond the present. The vast areas, which stretch far away to the different points of the compass, are rich in soil and forest and mines, beyond the reach of mortal computation. He would indeed be rash who would now attempt to put any limitation upon what, in God's providence, you are destined to become in the various fields of human endeavor."

Area.

According to figures compiled by the General Land Office the total area of Montana is 146,997 square miles or 94,078,080 acres. The land surface embraces 146,201 square miles or 93,568,640 acres, and the water surface 796 square miles or 509,440 acres.

No estimates based on complete data covering all townships have been made of the character of the land, but trained observers who are well acquainted with the different sections of the state have made estimates which divide the lands of Montana into three classes of about equal size, viz.: (1) Mountain lands, 30,000,000 acres; (2) Grazing lands, 30,000,000 acres; and (3), Arable lands, 30,000,000; and to make this estimate in convenient round numbers an area larger than the state of Connecticut is left out. The classification will be changed as more precise knowledge is gained, but will probably remain for all time as substantially correct.

In places the character of the land is not distinctly defined as tracts of one or more of the classes lie close together and merge one into the other.

The mineral wealth is in the mountain area, where mining is the chief industry of the inhabitants. The mountains are covered with timber and lumbering is extensively carried on. It has been estimated that Montana has 55,000,000,000 feet of standing merchantable timber. Few states are richer in this great asset.

Not all the mountain area is mountain land. Numerous valleys, some of large extent and containing farms of great productiveness, intersect this region. Grass covered hills adjoin the valleys and are excellent pasture lands. Parks in which grow prolific crops of the nutritious native grasses are common in the mountain area and afford, even at very high elevations, the best of pasture for the summer season.

In the mountains, too, are also to be found detached tracts that are suitable for farming or fruit growing. In the valleys and basins embraced within the mountainous part of Montana are millions of acres of farm lands: those in the valleys are usually irrigated from convenient streams and yield most prolific crops of grains, grasses and fruits. Constantly being added to the arable area are tracts of land on which the timber has been cut and which have been cleared for purposes of farming and fruit growing.

The grazing lands are scattered throughout the state and include the foothills that are too rough for cultivation, the bluffs and broken lands along the Missouri river and its tributaries, and the relatively small area of bad lands. Lands of this class are devoted to grazing, and their vast extent insures a great supply of food for all kinds of live stock.

Arable lands form the third class, and constitute in extent and fertility an agricultural empire such as perhaps no state, except one, possesses. Of the 30,000,000 acres of farm lands in Montana the census office bulletin, based on reports agents who are presumed to have visited every farm, states that the acreage in 1909 in cereals, other grains and seeds, hay and forage, and sundry crops aggregated 1,831,086 acres. To get this total were in-

cluded 584,732 acres of "wild, salt or prairie grasses," lands, evidently, which had not been plowed and seeded to grass. The production per acre of cultivated grasses is much greater than the yield of wild grasses. "Alfalfa," says the bulletin, "with an acreage less than two-fifths as great as the wild grasses, has a reported value nine-tenths as great."

The enumerators of the census office may have failed to find and report many newly broken acres; but if a million acres be added to the census figures, the total will still be less than three million acres. Do you grasp the significance of these figures? If there are in Montana 27,000,000 acres of farming land in a virgin state there is an area awaiting settlement and development larger than the whole state of Indiana. A large proportion of the raw lands are as fertile, and, when cultivated, will produce as large crops as those acres that yield the great crops that make Montana the banner state in value of crops per acre. On lands of similar quality and condition thousands of prosperous farms have been established in the last five years; and thousands of independent farmers bless the day when they settled in Montana. Like opportunities remain for many scores of thousands to find homes and fortunes on the broad and fertile acres of Montana.

In each of the three classes of land one industry is the dominant one; and in the pages which follow are printed such facts and statistics as could be gathered together that will help one to form an idea of the present condition of the state and the extent and variety of its resources. Marvelous Montana! How much has it accomplished with only a tithe of its resources developed! Who has imagination enough to draw a just mental picture of its splendid future?

Physical Features.

That Montana was a mountainous country with an inhospitable climate, possessed of great mineral wealth, and of vast stretches of land fitted only for the grazing of live stock, was the notion generally entertained until a recent period by those having no personal knowledge of the facts. The unequalled wealth of mineral deposits and the superiority of the country as a live stock region have been acknowledged for many years; but that, great as these resources are, "the Treasure State" is still richer in possessing many millions of acres of fertile, virgin farming lands, whose development will make the annual returns from the sale of farm products far exceed in value the product of mines or stock ranges, is the message that the authorities of the state of Montana wish to send to homeseekers throughout the world. The development of this vast empire of virgin land will require the labor of hundreds of thousands of farmers who will receive the reward that always follows intelligent effort in a new and fertile country.

A brief statement concerning the physical features of the state will serve to remove many misconceptions. Two-thirds of Montana consists of level, undulating or table lands which form a part of the great prairie region of the United States. From the eastern boundary to the backbone of the continent the land rises gradually, forming a great plain of rolling country which is large enough to contain several of the older states. This

vast region which has been devoted almost exclusively to the pasturage of cattle and sheep is being transformed into a farming country. Thousands of new homes have been built there, and much of the increased grain production comes from the newly broken acres; but there is room for ten times as many farms as have been established. In estimating the area of farm lands there must be added to the immense acreage in the prairie section the extensive acreage in the valleys, basins and on the benches of western, central and southern Montana which are intersected by outlying ranges of the Rocky Mountains. Agriculture is an older industry in this than in the eastern section, a larger proportion of the land is in private ownership and there are fewer opportunities to secure good tracts under the homestead law. Some of the valleys are extensive, and large areas are under irrigation.

The part of Montana that lies on the western side of the Rocky Mountains is on the Pacific slope of the continent and comprises about one-third of the area of the state. It is a region of many mountain ranges and of numerous streams. Valleys of varying sizes are numerous. The Bitter Root Valley, the Clarks Fork Valley and the Flathead Valley are the most extensive. Foothills and mountains are usually covered with valuable timber. Many grass covered slopes rise from the level of the valleys to high elevations and afford excellent pasturage. In northwestern Montana are many mountain lakes. Flathead Lake, one of the most beautiful bodies of water in the world and one of the largest fresh water lakes in the United States, is in this section. The precipitation in western Montana is greater than on the east side, the climate is milder, and the flora is different. In this section are the great forests of Montana, and fruit growing is well established as an extremely profitable industry.

The main range of the Rocky Mountains crosses the state in the western part and there are outlying ranges and spurs. The first settlements were in the mountain region, and when the territory was created in 1864 the name Montana, a Spanish word meaning a mountainous region, was chosen. The name is melodious, and is appropriate in its meaning to a part of the state, though misleading when used as a term to describe the character of the greater part of the land within the boundaries of the commonwealth.

Altitudes.

The influence of high altitudes upon climate and as a consequence upon crop productions is so well known that comment is needless. Prof. Gannett, of the United States Geological Survey, states that the average elevation of Montana above sea level is 3,900 feet. The average elevations of other states in this section are given as follows: Nevada, 5,600 feet; Wyoming, 6,400 feet; Colorado, 7,000 feet. Below an elevation of 4,000 feet Utah has no square miles, Colorado has only 9,000, while Montana has 51,600. Below 3,000 feet in altitude are 40,700 square miles within Montana. "Taking the area of the state (Montana) as a whole," says U. S. Census Bulletin 153, "it has been ascertained that 49 per cent is under 5,000 feet above sea level; 21 per cent from 5,000 to 6,000 feet; 14 per cent from 6,000 to 7,000 feet; 9 per cent from 7,000 to 8,000 feet and 7 per cent over 8,000 feet." The eleva-

tion at Helena, the capital of Montana, which is located at the base of the Continental Divide, is 4,110 feet. Salt Lake City has an elevation of 4,350 feet, Denver of 5,300 feet and Santa Fe of 6,840 feet.

The chief feature of the physical geography of Montana is the Rocky Mountain system. The main range divides the state into two sections of unequal size. Two-thirds of the state's area is in eastern Montana and one-third in western Montana. From the main range, which is extensive, stretch out numerous spurs; there are inferior ranges that parallel more or less closely the main range; high peaks are not absent; but the mountains in Montana do not reach as high elevations as those of Colorado; and frequent, low passes afford comparatively easy routes for railroad builders. The Northern Pacific Railroad crosses the Continental Divide at Mullan Pass at an elevation of 5,547 feet; Summit, the highest point on the main line of the Great Northern Railway, is 5,202 feet above sea level; and the elevation of Donald, the station of highest elevation in the Rocky Mountains on the line of the Chicago, Milwaukee & Puget Sound Railway, is only 6,332 feet.

Before reaching the point of crossing the Great Northern Railroad runs 475 miles through the northern part of the state east of the main range, in that distance climbing from 1,922 to 5,202 feet; from the eastern boundary of Montana to the Mullan Pass by the line of the Northern Pacific Railroad is 516 miles; and Chicago, Milwaukee & Puget Sound trains travel 504 miles in Montana before reaching the tunnel through which they pass from the Atlantic slope to the Pacific slope of the continent. The passes are all lower than those in states south of Montana; and as a consequence, the Montana railroads attain no heart breaking altitudes. At both the eastern and western boundaries the elevation of railroad tracks is less than 2,000 feet. In western Montana the Northern Pacific Railway parallels for many miles the Coeur d'Alene Mountains, follows Clarks Fork River and leaves the state at an elevation of about 2,200 feet; the Chicago, Milwaukee & Puget Sound Railway climbs the range and crosses it with only a slight deviation from its westward course; and the Great Northern Railway, which runs along the banks of the Kootenai River, passes out of the state at an altitude only slightly greater than 1,800 feet.

Montana has extensive areas of mountain lands; but the fact that within the borders of the state are 51,600 square miles below 4,000 feet in elevation, consisting for the most part of valley, table and rolling land level enough to be cultivated with farm machinery, considered in connection with the uncommon fertility of the soil and the amount of rainfall, assures the future greatness of the state as a farming region, and will be surprising information for those who have thought Montana to be a mass of mountains. Between elevations of 4,000 and 7,000 feet also is a large acreage that embraces some of the most productive farm lands in the world. The best wheat, the best barley, and the best oats in the United States, as determined by the prizes awarded at the New York Land Show, were grown on lands of this elevation.

Montana is rich in rivers which run through large and fertile valleys.

The vast amount of water that is precipitated is gathered from a myriad of springs, rivulets, brooks and streams to form the rivers. The rivers rise in the highest mountains, some peaks of which reach the height of 11,000 feet, and flow to the borders of the state where the elevation does not exceed 2,000 feet. Near their sources are great mining camps, and no part of the mountain region is without wood, water and grass which are necessities in the camps of the prospector, the miner and the pleasure seeker.

The Missouri and the Yellowstone are the great rivers which drain the eastern part of the state, which comprises two-thirds of its territory. From the sea to its source the Missouri is said to be the longest river in the world. It is formed at Three Forks, Gallatin County, by the union of the Jefferson, the Madison and the Gallatin rivers and flows at first north, then east through the central northern part of Montana into North Dakota, where a few miles beyond the state boundary line it receives the waters of the mighty Yellowstone river. Many large rivers flow into the Missouri and each has numerous tributaries. In order from east to west the chief affluents of the Missouri from the north are the Poplar, the Milk, the Marias, the Teton, the Sun and the Dearborn rivers; the Musselshell, the Judith, the Belt and Smith rivers enter from the south. These rivers drain extensive areas each of which differs in some respect from the other.

Each of the three rivers which form the Missouri is a large stream. The Gallatin river rises in the Yellowstone National Park and flows north through the Gallatin Valley, a section of marvelous fertility. The Madison river also rises in the Yellowstone Park and flows north through the upper and lower Madison valleys. The largest of the three is the Jefferson river, which is formed by the junction of the Big Hole and Beaverhead rivers. It receives from the north the Boulder river, which drains the greater part of Jefferson county. The Big Hole Basin, the Beaverhead Valley, the Ruby Valley and the Jefferson Valley are notable parts of this drainage basin. Milk river has a long and extensive valley and drains the region south of the Canadian boundary line. The Musselshell flows for many miles through the central part of the state, and the large and fertile Judith Basin is drained by the Judith river, which flows through it.

The Yellowstone river carries a great volume of water and is a swift and beautiful stream. Important tributaries which enter from the south are the Powder, the Tongue, the Big Horn, Clark's Fork of the Yellowstone, the Stillwater and the Boulder rivers. The first four named rivers rise in Wyoming. The principal streams which empty into the Yellowstone from the north are the Sweet Grass and Shields rivers. The Yellowstone Valley widens out at many points and there are more or less extensive valleys along all the tributary streams.

The waters which fall in western Montana find their way to the Pacific Ocean through the Columbia river, into which empty Clarks Fork of the Columbia and the Kootenai which are the two great rivers of this section. This portion of Montana abounds in streams, the Deer Lodge, the Big Blackfoot, the Bitter Root, the Missoula, the Flathead are the chief rivers which gather the waters of two-thirds of western Montana and pour them

Fergus County Exhibit at Minneapolis Land Show.

into Clarks Fork of the Columbia. Although a large river the Kootenai drains but a small portion of Montana.

In a peak in Glacier Park rise three small streams whose sources are close together; the waters of one stream find their way to the Pacific Ocean; those of another to the Gulf of Mexico; while those of the third make the long journey to Hudson Bay.

Montana has many beautiful lakes. Flathead Lake is the only one of a large size; it is 33 miles long and 15 miles wide, covers an area of 360 square miles, and is navigated by steamships which make regular trips between the principle ports.

The Amount of Water That Falls.

The table that follows has been compiled from measurements of the flow of water in the rivers named. An acre foot, which is used as the unit of measurement, means an amount of water sufficient to cover one acre of ground to the depth of 12 inches. For instance, if none of the water that was precipitated during the year 1910 in the country drained by the Beaverhead river at Barratt's had evaporated, sunk, or run off, there would have been standing on the 373,000 acres at the end of the year water of an average depth of one foot.

RUN-OFF IN ACRE FEET.

River	Acre Feet.
Beaverhead at Barratt's 1910	373,000
Big Blackfoot River at Bonner—Mean annual flow with 6 years record	1,400,000
Big Horn River near Hardin, 1910	2,780,000
Big Muddy River near Culbertson, 1910	23,800
Bitter Root River at Missoula—Mean annual flow with 7 years record	2,380,000
Boulder River near Contact—From May 1, 1910, to Dec. 16, 1910—7½ months	209,000
Clark Fork of Columbia or Missoula River for 1908	2,460,000
Clark Fork of Yellowstone at Fromberg, 1909	1,130,000
Clark Fork of Yellowstone at Fromberg, 1910	762,000
Flathead River at Polson, 1910	8,870,000
Gallatin River near Logan—Mean annual flow with 8 years record	747,000
Jefferson River near Silverstar—From Aug. 11, 1910, to Dec. 31, 1910—4½ months record	278,800
Judith River—Gauging station maintained 30 miles northwest of Lewistown, from Sept. to Dec. 1910—4 months record	84,000
Madison River at Norris—From Aug. 12, 1910, to Nov. 20, 1910	285,500
Marias River near Shelby—From May 20, 1907, to Dec. 31, 1907—7 months and 12 days	888,000
Milk River at Havre for 1910	105,000
Milk River at Malta for 1910	126,000
Milk River at Hinsdale for 1910	207,000
Missouri River—	
At Fort Benton, from Aug. 17, 1910, to Dec. 31, 1910	1,268,500
At Toston, from April 5, 1910, to Dec. 31, 1910	2,750,000
At Cascade, for the year 1910	4,400,000
Musselshell River at Harlowton, 1910	88,500
Smith River at Truly—From March 24, 1906, to Nov. 16, 1906	139,000
Sun River at Sun River—From March 13, 1910, to Dec. 31, 1910	706,000
Sun River North Fork at Augusta for 1910	646,000
Teton River near Strabane, 1910	89,100
Yellowston River at Glendive, 1910	8,890,000
Yellowstone River at Huntley, 1911	6,060,000

Climate.

What sort of climate has Montana? is a question often asked. One part of the state is on the Atlantic and the other on the Pacific slope of the continent; it embraces an area as great as two-thirds of France or Germany; elevations range from 2,000 to 6,000 feet, rising even to 11,000 feet in the uninhabited mountain ranges; there are regions of plains, and of foothills; there are sheltered basins and valleys; and for these reasons climatic conditions at one point differ from those at another not similarly situated. On another page may be found a table of statistics relating to weather conditions at many representative stations. Every county is represented in these reports and a study of them will remove any false notions that may have been entertained on this subject.

The climate of Montana is excellent; it is healthful and exhilarating; the water is pure; and the air—clear, dry, vitalizing, filled with ozone—is of a kind which it is a luxury to breathe. Perhaps nine out of every ten persons who ever lived one whole year in Montana prefer its climate the year around to the climate of any other region of which they have personal knowledge. The country is healthful and the death rate is the lowest of all states except one.

The following comprehensive statement of the weather conditions in Montana is taken from an official publication:

"There are no fogs, no malaria in Montana, and contagious and infectious diseases are rare, and when manifested prove to have come from infection of less favored states, but here they yield readily to professional treatment, proving fatal in only the exceptional case. The winter season is not one of continued cold; when the frigid breezes of Canada are directed over the state the thermometer will drop as low as twenty degrees below zero, but these cold periods are infrequent and of short duration, as the prevailing winds of the winter are the soft chinooks that quickly dissipate the snow and bring the balmy atmosphere of summer and the tinge of a pleasing autumn. And when a cold wave does sweep in from the east or north, it is not severely felt as the atmosphere at such times is almost entirely free from the chill of moisture, and one does not feel twenty degrees below here as severely as zero and above is felt in the eastern states. Except upon the plains of the extreme eastern border of the state, the blizzard is unknown, and the cyclone and the tornado are not known. Great herds of cattle and flocks of sheep feed throughout the winter on every bench and plain, and these are given but little shelter, food or attention. The nourishing properties that remain in the grass and sustain the stock during the winter months is due to the fact that before the grass is ripened, the chinook winds cure it, turning it into standing hay, instead of having the frost drive the nutriment into the roots, leaving dead and substanceless straw. This, with the salubrity of the climate, is the secret of the success of Montana's stock ranges. Snowfall is light except in the midst of the mountain ranges and at the higher altitudes, the greater part of the state seldom receiving a precipitation of more than two or three inches at a time. The winters are capricious, but they are warm, sunlit and inviting, and the occasenal cold snap but adds vigor to the universal energy of the people. Spring, summer, autumn and winter are all enjoyable and healthful seasons. In midsummer when the sun is overhead, the temperature reaches an uncomfortable point, but as the sun dips behind the mountains the cooling air of the Rockies displaces the heated air of the day, leaving the evenings and nights delightfully cool and refreshing."— (Seventh Annual Report, Bureau of Agriculture, Labor and Industry, pages 9-10.)

A Government report on the climate of Montana contains the following:

"The light snowfall in the valleys throughout the state during the winter months is usually speedily evaporated by the chinook winds which are prevalent from Oregon to Nebraska, from the Peace River to Arizona, being particularly common in Montana, where they do much to modify the climate."

The chinook is a wind which comes from the warm Japanese current in the Pacific Ocean and tempers the climate in all the country it reaches. There are cold days in Montana as are to be expected in a northern state, but a cold "spell o' weather" usually lasts only two or three days at a time, and outdoor work during the winter months is seldom prevented by the severity of the cold.

In his little book called "The Treasure State," James H. Mills said:

"The average temperature in Montana is about the same as in New York or Pennsylvania. The snowfall in the valleys is less than in either of those states; there is more sunshine than in any Middle, Eastern or New England state and the great Mountains, ribbed with veins of gold, silver and copper and crowned with majestic forests, are but gigantic framework in which are set great picture valleys, bench lands and foothills, fertile as the Valley of the Nile, and which have never yet refused to yield bounteous harvests when touched by the hand of industry and nourished with water."

Randall J. Condon, superintendent of the public schools of Cincinnati, Ohio, for some years resided in Montana and has written for a geography which is used in the public schools a brief but comprehensive account of Montana. From personal knowledge he writes the following words about the climate of the state:

"It is doubtful if there is another state in the Union where the climate taken the year round is so delightful as that of Montana. Its northern latitude is more than offset by the mild westerly winds, which temper the climate of the mountains and plains and yet do not bring excessive moisture.

Fogs are almost unknown, and on the days when the temperature is low there is not that penetrating chill which is felt in the more humid states.

As in any extreme northern state, the theremometer occassionally records a low midwinter temperature of 20°, 30°, and, in rare cases, 50° below zero; but the "cold spells" are short. While they remain there is practically no wind; the air is dry and the sunshine clear. The ordinary outdoor occupations may be carried on in winter with little inconvenience. On the other hand, the summer temperatures are never oppressive, and heat prostrations are unknown. The temperature in the middle of the long summer days may rise higher than in states farther south, but with the coming of night the cold mountain breeze brings a delightful change.

A COMPARISON OF THE MONTHLY AND MEAN ANNUAL. TEMPERATURES FOR FOUR STATES.

State.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	nual.
Montana.	19	22	30	44	53	59	66	65	55	45	31	24	44
Wisconsin	15	16	29	42	56	65	70	67	59	48	32	19	44
New York	22	22	31	44	55	65	69	67	61	49	37	27	46
Ohio.....	28	27	38	50	61	70	74	71	65	53	41	31	49

In a state of such diverse topography as Montana no one statement can be made which will apply alike to all sections.

The western mountain section—especially in the valleys—has a milder climate, receives more moisture, and is less subject to sudden changes than the eastern or plain section.

The following tabulation taken from the records of many stations for a series of years shows the average number of days of sunshine, cloud and rain:

	Average Number of Days.			
	Clear	Cloudy	Cloudy	With Rain
East Division	129	136	100	98
West Division	175	125	65	80

A temperature of 90° or above may occur on a few days of summer in the western valleys, while in the eastern sections 100° or above may be recorded. By referring to the temperature charts it will be seen that the extremes of summer heat are recorded in the southeast; the winter extremes in the northeast. The mean annual temperature ranges from 37° in the extreme northeast to 47° in some of the sheltered valleys. In the warmest sections—the upper Yellowstone valley, the basin west of the main divide and in several of the smaller valleys in the central portion just east of the mountains —the winters are less severe than those in the Mississippi valley and the east, five or ten degrees farther south."

CLIMATOLOGICAL DATA FOR THE YEAR 1911.

Monthly and Annual Temperatures.

COUNTIES AND STATIONS.	Elevation Feet	January—Average Temperature	February—Average Temperature	March—Average Temperature	April—Average Temperature	May—Average Temperature	June—Average Temperature	July—Average Temperature	August—Average Temperature	September—Average Temperature	October—Average Temperature	November—Average Temperature	December—Average Temperature	Annual Average Temperature
BEAVERHEAD														
Bowen	6,060	13.0	1.6	20.2	32.4	41.2	51.8	53.4	50.6	42.0	29.4	13.6	7.4	29.7
Dillon	5,147	24.9	27.2	39.2	44.7	50.4	60.4	62.6	60.0	54.2	48.0	32.2	27.9	44.3
BLAINE														
Clear Creek	.....	10.0	17.9	39.2	41.0	51.8	63.6	62.9	59.8	50.3	40.4	21.6	23.4	40.2
CARBON														
Bridger	3,664	22.6	23.1	40.0	42.4	54.0	64.6	66.0	63.0	57.0	41.6	25.5	18.3	43.2
Red Lodge	5,548	21.0	18.8	35.4	36.6	46.8	58.2	58.4	56.8	50.4	38.4	23.8	17.8	38.5
CASCADE														
Adel	5,200	20.4	20.5	37.0	36.8	45.3	58.0	58.9	57.0	49.5	40.1	32.3	23.0	39.9
Cascade	3,361	19.2	21.2	41.3	41.4	50.8	63.4	63.8	60.8	52.4	44.4	27.8	26.8	42.8
Fort Shaw	3,500	14.7	19.5	41.6	40.3	51.5	62.6	66.0	62.8	54.8	....	25.2	25.2	....
Great Falls	3,350	16.3	20.8	40.8	41.8	51.4	64.7	66.2	62.2	53.4	44.8	28.4	26.0	43.1
CHOUTEAU														
Fort Benton	2,630	9.4	15.1	41.0	....	53.2	66.8	66.4	62.5	54.8	44.7	26.4	23.8	....
Lonetree	3,280	16.9	18.9	42.0	42.4	52.7	64.3	66.7	63.2	54.2	45.4	27.0	27.4	43.4
CUSTER														
Ekalaka	.....	18.8	25.8	38.4	44.8	55.6	68.6	68.6	64.2	59.1	45.0	25.6	22.2	44.7
Fallon	2,208	8.1	7.2	36.3	44.6	56.5	68.2	67.0	65.0	57.4	44.8	21.5	19.0	41.3
Graham	.....	19.8	24.3	39.2	43.6	55.4	67.5	67.0	65.4	58.2	44.8	26.0	22.2	44.4
Miles City	2,371	12.6	11.9	41.0	47.0	58.4	70.7	70.1	67.2	61.0	47.4	26.7	21.7	44.6
DAWSON														
Glendive	2,069	....	11.7	38.2	44.6	58.2	71.6	67.2	65.0	57.4	44.8	21.7	19.4	....
Sidney	.....	5.5	12.2	35.0	43.9	55.4	67.6	65.9	63.7	55.6	44.0	18.2	19.9	40.5
Spring Brook	.....	10.9	11.6	38.4	43.4	56.4	67.4	65.6	63.8	56.2	42.6	20.2	20.2	41.3
Tokna	2,050	9.4	11.0	39.2	....	62.8	69.5	69.8	63.7	55.2	44.0	20.9	20.2	....
DEER LODGE														
Anaconda	5,300	24.3	11.8	37.2	36.7	46.0	57.2	60.4	57.9	49.8	39.4	27.8	24.0	40.0
East Anaconda	5,500	24.0	20.2	37.0	38.0	45.5	56.8	63.2	60.2	50.7	39.2	27.8	24.4	40.6
FERGUS														
Denton	3,500	13.8	17.8	39.1	39.3	50.4	61.4	64.9	61.7	53.2	43.7	25.5	25.4	41.4
Garniel	5,500	19.2	16.5	33.1	33.8	42.5	56.8	58.4	55.4	48.4	37.8	19.4	16.2	36.5
Lewistown	4,010	18.4	19.6	38.0	37.8	49.1	61.4	61.9	58.2	52.2	41.4	22.6	23.7	40.4
Utica	5,000	18.2	21.2	38.6	37.6	47.9	59.8	62.0	58.0	51.8	42.8	26.7	25.6	40.8
FLATHEAD														
Kalispell	2,965	21.8	25.0	38.4	42.1	48.7	60.2	62.6	60.4	51.0	42.2	25.6	22.2	41.7
Pleasant Valley	3,500	18.2	17.7	32.9	39.0	45.5	56.6	57.1	54.7	48.1	38.2	24.6	20.7	37.8
Polson	2,920	27.6	28.0	40.4	41.6	50.6	61.6	65.4	62.0	55.2	45.6	29.7	27.7	44.6
GALLATIN														
Bozeman	4,700	21.2	17.4	37.1	38.6	47.2	58.8	60.8	59.0	49.4	39.0	25.8	20.6	39.6
Grayling	6,700	14.5	7.9	23.4	30.6	42.2	51.4	52.5	51.2	43.6	32.4	15.8	14.6	31.7

CLIMATOLOGICAL DATA FOR THE YEAR 1911—Continued.
Monthly and Annual Temperatures.

COUNTIES AND STATIONS.	Elevation Feet.....	January—Average Temperature.....	February—Average Temperature.....	March—Average Temperature.....	April—Average Temperature.....	May—Average Temperature.....	June—Average Temperature.....	July—Average Temperature.....	August—Average Temperature.....	September—Average Temperature.....	October—Average Temperature.....	November—Average Temperature.....	December—Average Temperature.....	Annual Average Temperature.....
GRANITE														
Philipsburg	5,275	23.8	18.6	36.3	40.3	46.2	....	....	....	49.7	41.3	27.2	23.1	....
HILL														
Chester	3,140	2.2	4.5	33.9	39.2	50.8	63.0	63.4	60.2	50.4	41.6	19.1	18.4	37.2
Gold Butte	.....	8.0	14.8	35.7	39.3	50.6	61.6	59.4	59.4	49.4	41.9	21.2	20.0	38.4
Havre	2,505	1.6	5.4	36.0	41.0	53.6	66.0	65.6	62.7	52.6	44.2	21.0	22.2	39.3
JEFFERSON														
Boulder	4,920	....	....	....	....	44.1	56.0	59.7	58.0	50.8	41.2	....	16.4	....
Elkhorn	6,576	....	....	....	....	....	....	....	....	....	....	....	....	....
Renova	4,383	25.4	23.4	41.0	41.7	49.9	61.2	63.2	60.0	51.6	41.6	30.4	24.8	42.8
LEWIS AND CLARK														
Augusta	4,071	14.8	17.6	35.4	36.8	47.0	58.4	58.8	57.2	48.2	40.6	21.8	20.0	38.0
Canyon Ferry	3,644	17.2	17.8	38.9	41.8	51.0	63.2	65.6	63.4	54.2	41.5	27.3	18.8	41.7
Chessman	5,275	20.2	14.2	33.6	32.0	40.5	52.8	55.4	52.9	44.8	36.3	23.0	19.3	35.4
Helena	4,110	17.8	18.2	39.0	39.7	49.6	61.4	63.5	61.8	51.2	40.7	27.4	23.0	41.1
LINCOLN														
Fortine	2,975	18.2	22.0	37.2	39.9	46.9	58.2	60.2	56.9	51.2	39.2	24.8	20.9	39.6
MADISON														
Norris	4,845	27.8	25.0	41.2	42.6	50.3	61.2	65.1	62.4	54.9	43.3	30.7	24.9	44.1
Virginia City	5,880	22.7	18.7	35.0	38.2	47.1	58.0	61.8	59.2	50.4	38.2	26.8	20.2	39.7
MEAGHER														
Harlowton	4,165	16.4	19.0	36.6	37.4	48.6	60.9	61.2	60.2	52.0	39.0	25.4	23.2	40.0
MISSOULA														
Missoula	3,225	24.2	24.4	39.0	43.2	50.8	61.8	65.8	63.8	54.5	43.2	30.0	25.2	43.8
St. Ignatius	2,700	26.0	24.6	39.7	44.1	50.1	60.0	64.6	60.6	53.2	42.2	25.5	27.4	43.2
MUSSELSHELL														
Ryegate	3,640	23.1	25.0	40.4	41.0	52.4	62.8	63.5	62.8	55.2	42.7	26.4	24.2	43.3
POWELL														
Ovando	4,207	17.8	13.2	31.6	34.8	44.9	56.2	57.9	54.6	55.0	34.8	20.6	16.0	36.4
RAVALLI														
Como	3,700	26.6	24.0	41.1	43.2	50.8	60.0	65.4	60.9	50.9	41.8	31.1	27.4	43.6
Hamilton	3,575	26.4	25.9	41.9	44.5	51.0	61.2	65.4	61.4	52.8	42.6	32.6	26.7	44.4
ROSEBUD														
Busby	.....	14.4	16.4	38.0	43.0	53.5	66.8	66.2	64.4	59.2	42.6	23.9	19.3	42.3
SANDERS														
Plains	2,475	22.4	25.0	40.5	43.0	51.1	61.1	64.4	61.8	53.3	44.1	32.0	25.6	43.7
SILVER BOW														
Butte	5,716	25.4	19.0	37.6	37.4	46.8	59.0	63.1	60.4	50.9	39.0	26.9	22.8	40.7
SWEET GRASS														
Big Timber	4,072	24.2	23.3	42.4	43.4	51.8	62.6	64.4	60.7	56.4	44.0	31.2	28.3	44.4
Busteed	.....	21.0	19.5	40.4	41.3	50.6	62.3	63.0	60.5	54.0	42.2	29.0	26.8	42.6
TETON														
Babb	4,461	10.4	18.6	35.7	35.1	45.7	53.9	55.6	51.9	44.5	41.2	22.5	21.6	36.4
Blackleaf	4,260	18.8	17.6	33.8	35.8	45.2	56.0	56.2	54.6	45.8	40.8	23.4	23.5	37.6
VALLEY														
Culbertson	1,927	1.8	4.2	31.8	43.0	56.0	70.2	68.5	67.7	58.0	52.3	....	....	....
Malta	2,240	3.0	2.4	36.3	41.1	53.6	66.2	66.0	62.9	53.5	43.6	18.9	17.2	38.2
Medicine Lake	.....	0.2	0.4	29.0	40.6	52.7	64.2	63.8	61.8	53.2	41.0	16.3	14.0	36.4
Poplar	2,020	0.6	4.6	35.1	44.1	55.6	67.3	66.5	65.2	56.6	44.2	16.1	15.8	39.3
YELLOWSTONE														
Billings	3,115	16.6	17.9	41.8	43.2	54.4	66.0	67.2	63.4	56.9	43.0	26.2	24.2	43.0
Foster	.....	14.4	15.2	38.6	43.3	54.5	67.4	67.0	65.0	58.0	44.0	25.0	22.4	42.9
Huntley	3,014	17.8	17.6	42.8	44.0	56.0	67.2	69.0	65.0	58.6	45.7	27.8	26.3	44.8
Average of all Stations	3,987	16.8	17.2	37.4	40.4	50.4	62.9	63.3	60.6	52.8	41.3	24.9	22.0	40.8

CLIMATOLOGICAL DATA FOR THE YEAR 1911.

Monthly and Annual Precipitation.

Average Annual Precipitation for all Stations 17.80
Average for May, June and July 6.87
Percentage of Precipitation in the three growing months to total.....38.5%

COUNTIES AND STATIONS.	January	February	March	April	May	June	July	August	September	October	November	December	Annual
BEAVERHEAD													
Bowen	1.00	0.29	0.08	0.82	1.34	3.60	0.53	0.98	1.35	2.77	1.14	0.78	14.68
Cabin Creek	0.66	0.29	0.17	1.22	1.71	2.50	0.26	0.56	1.02	1.36	0.34	0.08	10.17
Dillon	1.29	1.23	0.07	1.33	3.26	2.30	0.56	1.44	1.03	1.65	1.76	0.80	16.72
BLAINE													
Clear Creek	1.45	1.45	0.56	1.35	2.48	2.62	2.14	2.89	5.65	1.30	1.85	0.50	24.74
BROADWATER													
Wall Rock Mountain	1.63	0.33	0.39	0.45	3.40	2.33	0.93	1.40	1.66	1.46	1.01	2.17	17.07
CARBON													
Bridger	0.21	0.01	T	1.43	1.81	1.20	1.27	0.67	0.39	0.42	0.37	0.04	7.82
Red Lodge	1.12	1.22	0.77	2.49	4.35	2.07	2.20	1.54	0.74	1.05	1.39	0.52	19.46
CASCADE													
Adel	1.35	3.25	0.57	1.81	4.22	2.83	2.46	3.66	2.70	2.63	1.31	1.90	28.69
Cascade	0.88	1.08	0.37	1.31	2.40	3.45	1.18	2.77	2.83	1.68	0.87	0.65	19.47
Fort Shaw	0.28	0.52	0.34	1.04	1.57	2.54	1.25	1.60	1.72	1.43	0.41	0.29	12.99
Great Falls	1.29	1.04	0.65	1.67	2.83	2.88	0.56	2.67	2.18	0.95	0.89	0.75	18.36
CHOUTEAU													
Fort Benton	1.00	1.00	T	....	2.06	1.69	0.93	3.30	3.90	1.25	0.35	0.50	.....
Lonetree	1.14	1.31	0.31	1.56	3.42	2.07	1.01	2.98	2.94	1.71	0.78	0.51	19.77
CUSTER													
Ekalaka	0.09	T	0.08	0.26	1.25	2.86	1.45	2.77	2.14	0.60	....	....	.....
Fallon	0.51	0.05	....	0.41	3.69	4.60	1.18	2.04	2.51	0.30	0.10	0.32	15.71
Graham	0.32	0.06	0.18	1.02	1.03	1.29	0.95	3.02	2.26	1.17	0.62	0.45	12.37
Miles City	1.58	0.14	0.14	0.36	0.74	3.44	1.25	1.59	1.58	0.89	0.95	1.51	14.17
DAWSON													
Glendive	....	....	0.25	1.09	4.35	2.21	0.63	1.83	3.13	0.80	0.65	0.48	.....
Sidney	0.94	0.60	0.16	1.04	3.13	1.18	1.12	2.10	3.18	0.74	0.80	0.41	15.40
Springbrook	0.55	1.90	0.25	0.32	2.31	5.83	1.05	1.75	3.48	1.68	1.71	0.61	21.44
Tokna	0.07	0.80	0.09	1.09	2.88	1.47	1.14	2.63	3.82	1.06	0.94	0.40	16.33
DEER LODGE													
Anaconda	1.18	0.67	0.16	0.96	1.95	5.35	0.04	1.83	1.28	2.43	0.83	0.25	16.93
East Anaconda	1.33	0.81	0.47	1.97	1.88	5.11	0.01	1.46	1.11	2.77	0.78	0.38	18.08
FERGUS													
Denton	0.95	0.41	0.48	1.43	2.58	0.97	0.70	2.31	2.02	1.12	0.62	0.21	13.80
Garniel	3.00	2.23	3.50	3.80	8.90	3.00	2.51	3.91	2.27	1.25	1.65	2.53	38.55
Lewistown	1.54	0.46	0.67	1.64	5.18	3.12	1.75	4.15	1.81	1.96	1.32	0.57	24.17
Utica	0.62	0.51	0.81	0.92	4.05	5.17	1.12	5.37	1.02	0.19	0.62	0.20	21.60
FLATHEAD													
Kalispell	0.49	0.48	0.51	0.58	0.96	3.83	0.78	1.44	2.75	0.84	2.49	0.95	16.10
Pleasant Valley	1.87	1.82	0.77	0.70	2.27	3.45	0.53	1.72	4.01	0.30	3.67	1.26	22.37
Polson	1.14	0.62	0.37	0.54	1.61	5.11	0.42	0.98	2.40	1.66	2.04	0.59	17.48
GALLATIN													
Bozeman	1.77	0.33	0.05	1.57	3.56	3.04	0.84	1.52	1.73	2.08	1.00	0.65	18.14
East Gallatin	2.44	0.81	0.23	1.34	3.79	3.19	1.84	1.74	1.25	1.49	1.57	2.08	21.77
Grayling	2.50	0.60	0.79	0.54	2.65	2.57	1.12	0.56	0.94	1.20	1.09	1.01	15.57
GRANITE													
Philipsburg	0.88	0.75	0.15	1.48	2.01	....	....	....	1.18	3.57	1.31	0.53	.....
HILL													
Chester	0.92	T	T	0.64	1.78	2.68	1.42	1.34	3.99	1.20	1.24	0.40	15.61
Goldbutte	0.53	0.30	0.23	0.17	1.70	5.91	1.25	1.93	5.40	0.40	0.44	0.22	18.48
Havre	1.42	0.60	0.16	1.29	1.45	2.14	1.38	2.24	5.99	0.80	1.19	0.33	18.99
JEFFERSON													
Boulder	....	....	....	....	2.47	3.62	0.38	1.09	1.15	2.32	....	0.64	.....
Elkhorn	1.65	0.26	0.21	2.01	2.84	4.00	0.70	1.25	1.29	1.68	1.19	0.78	17.86
Renova	0.95	0.33	....	0.76	1.74	3.40	0.04	0.50	1.75	0.84	0.27	0.11	10.69
LEWIS AND CLARK													
Augusta	0.75	0.70	0.17	0.84	2.99	4.76	0.91	1.70	2.23	2.39	1.16	0.30	18.90
Canyon Ferry	0.15	0.08	0.17	0.42	1.74	4.72	1.08	0.89	1.70	1.79	0.08	0.36	13.18
Chessman	1.61	1.24	0.47	1.93	3.44	5.11	1.18	1.55	1.94	3.11	1.58	0.83	23.99
Helena	1.75	0.22	0.48	1.05	2.07	3.32	0.67	0.87	2.24	2.40	0.64	0.30	16.01
LINCOLN													
Fortine	1.59	1.03	0.74	0.71	2.77	4.87	0.29	1.36	1.71	0.34	2.16	1.87	19.44
MADISON													
Virginia City	0.97	0.50	0.15	0.27	2.17	3.46	0.83	1.21	1.63	1.05	1.33	1.00	14.57
MEAGHER													
Copper	1.46	0.47	0.23	0.22	3.18	2.92	0.94	1.84	1.92	0.66	0.67	0.82	15.33
Harlowton	1.45	0.45	0.45	0.44	4.13	2.11	0.59	1.77	....	0.35	0.48	0.10	.....

CLIMATOLOGICAL DATA FOR THE YEAR 1911—Continued.
Monthly and Annual Precipitation.

COUNTIES AND STATIONS.	January	February	March	April	May	June	July	August	September	October	November	December	Annual
MISSOULA													
Missoula	0.68	0.41	0.11	0.72	1.00	3.38	0.21	0.43	1.31	2.32	0.58	0.84	11.99
St. Ignatius	0.45	0.31	0.47	1.14	2.73	4.37	0.63	1.19	3.02	2.32	1.55	0.50	18.68
Saltese	7.45	2.28	2.56	1.45	4.00	2.77	0.28	1.95	3.04	0.72	6.70	2.33	35.53
MUSSELSHELL													
Ryegate	0.38	0.50	0.12	1.90	4.85	2.09	1.40	1.83	3.03	1.48	1.23	....	.....
PARK													
Clyde Park	1.00	0.29	0.02	1.25	3.57	2.90	0.76	1.47	0.85	0.55	0.66	0.26	13.58
Trail Creek	1.14	0.96	0.72	2.82	3.97	4.19	1.45	1.79	1.73	2.07	1.28	0.98	23.10
POWELL													
Ovando	3.13	1.45	0.90	1.46	0.78	4.51	0.91	1.18	1.18	2.76	....	2.15	.....
RAVALLI													
Como	1.52	0.50	0.25	1.46	1.13	3.40	0.08	1.26	2.10	1.64	2.13	0.39	15.86
Hamilton	1.01	0.23	....	1.16	0.76	2.99	0.87	1.62	1.90	1.99	1.05	0.53	14.11
ROSEBUD													
Busby	0.65	0.06	0.62	0.39	2.14	2.55	1.42	1.46	0.90	1.23	0.62	0.71	12.75
SANDERS													
Plains	0.50	0.30	0.20	0.30	0.73	2.51	0.18	1.38	3.16	T	2.50	0.20	11.96
SILVER BOW													
Butte	1.70	0.60	0.20	2.35	2.20	3.30	0.40	1.70	1.20	3.30	0.95	1.12	19.02
SWEET GRASS													
Big Timber	1.99	1.64	....	0.86	4.01	2.37	1.29	1.58	0.89	0.65	0.56	0.20	16.04
Busteed	1.55	0.36	0.07	0.78	3.26	2.12	1.18	2.69	1.09	1.10	0.36	0.13	14.69
TETON													
Babb	3.04	1.87	0.59	0.70	3.44	3.23	2.45	2.83	5.07	0.39	3.09	0.40	27.10
Blackleaf	0.41	0.20	T	0.57	5.10	5.86	2.86	3.59	6.93	1.42	1.52	0.24	28.70
VALLEY													
Culbertson	1.10	1.00	T	0.72	3.88	1.48	0.95	0.99	4.41	1.10	0.60	0.50	16.73
Malta	0.66	0.56	0.03	0.78	3.09	2.70	1.78	1.44	5.81	0.81	0.38	0.24	18.28
Medicine Lake	1.20	1.70	0.28	0.41	2.60	1.28	0.96	2.11	4.51	1.66	0.18	0.08	16.97
Poplar	0.40	0.35	0.10	0.68	2.37	1.75	1.35	1.74	3.99	1.18	0.35	0.10	14.36
YELLOWSTONE													
Billings	1.35	0.08	0.11	0.97	3.24	1.59	0.90	0.89	0.50	0.71	0.28	0.31	10.93
Foster	0.64	0.08	0.46	0.77	1.76	2.27	0.73	0.90	0.76	1.10	0.50	0.42	10.39
Huntley	1.14	0.50	0.15	0.97	3.60	3.38	0.99	0.90	0.56	1.30	0.57	0.26	14.32
Average of all Stations..	1.24	0.74	0.42	1.10	2.73	3.13	1.02	1.82	2.36	1.43	1.14	0.67	17.80

Status of Land.

Montana contains 94,078,080 acres, of which 509,440 acres are water surface. The land surface comprises 93,568,640 acres. Sovereignty of the whole country and ownership of the public land came to the government of the United States as results of the Louisiana purchase and of the treaty defining the boundaries of the Oregon territory, subject to whatever rights of ownership or occupancy as were possessed by the aboriginal Indians who roamed over the country. Later reservations were set aside upon which the Indians were required to reside. Some of the reservations have been abolished in whole or in greater part, and the only large reservations remaining are the Blackfeet, Fort Belknap, Fort Peck, Crow and Northern Cheyenne. Lands have been allotted to certain Indians and some of them have become successful farmers and stock growers. July 1, 1910, there were included in all Indian reservations in Montana 5,558,464 acres. The Flathead reservation was opened to settlement in 1909 and it is expected that parts of the Blackfeet and Fort Peck reservations will be opened in 1913. The following letter gives the latest available information concerning the prospective opening of these two reservations:

DEPARTMENT OF THE INTERIOR.
GENERAL LAND OFFICE, WASHINGTON.

October 12, 1912.

Mr. J. H. Hall, Commissioner,
Bureau of Agriculture, Labor, Industry and Publicity,
Helena, Montana.

Sir:

In reply to your letter of October 1, 1912, you are informed that the surplus lands within the Fort Peck and Blackfeet Indian Reservations, in Montana, will be opened by Proclamations of the President at some future date as soon as the necessary preliminary work has been completed. The Proclamations will prescribe the time when and manner in which the lands may be settled upon, occupied, and entered. It is not now possible to furnish even the approximate area of the surplus lands in said reservations which will be available for entry after the Indian allotments and the other necessary reservations and withdrawals have been made. One-fifth of the appraised value of the lands must be paid in cash at the time of filing. The remainder of the purchase money may be paid in five equal annual installments beginning one year from the date of filing.

The Blackfeet Reservation embraces about 1,500,000 acres of which approximately 840,000 acres have been allotted to Indians, the allotments not yet having been approved. The surplus lands are now being classified and appraised by a commission appointed for that purpose and when this work is completed the surplus lands will be disposed of pursuant to the act of March 1, 1907 (34 Stat., 1035), under the general provisions of the homestead, mineral, and townsite laws, and of the reclamation act where irrigation projects are practicable. The agricultural lands are to be disposed of at the appraised price: the mineral and coal lands at the prices fixed under the mineral and coal land laws of the United States; and the timber lands are to be sold under sealed bids at not less than five dollars per acre. The lands have been surveyed; the allotment work in the field has been completed and it is expected that the classification and appraisement work will be finished by January 1, 1913. The surplus lands may be opened during 1913.

The Fort Peck Reservation embraces about 1,776,000 acres which area will be reduced by allotments to Indians and other reservations and selections. Allotment work in the field under the provisions of the act of May 30, 1908 (35 Stat., 558), has been completed, the allotments not yet having been approved, as a large part of the land allotted is underlaid with coal. The classification and appraisement of the surplus lands under the provisions of the act mentioned will be completed by March 1, 1913, and the surplus lands disposed of at not less than the appraised price under the general provisions of the homestead, desert land, mineral, and townsite lands of the United States, as provided by the said act of May 30, 1908. The lands will probably be opened during 1913. District land office: Glasgow, Montana.

There is no authority for opening to settlement and entry surplus lands in the Crow or in the Fort Belknap Indian Reservations.

Very respectfully,

(Signed) JOHN McPHAUL,
Acting Assistant Commissioner.

Those who wish to be informed about these reservations should write to the Commissioner of the General Land office at Washington and ask to be put upon the mailing list to receive such pamphlets as may be issued hereafter concerning them. The Havre land office is the one nearest to the Blackfeet reservation and the Glasgow land office to the Fort Peck reservation and will probably be designated as the offices to receive entries.

In military reservations, July 1, 1910, were 231,307 acres, the greater part in Fort Assinniboine reservation of 168,610 acres which has been abandoned

Fort Peck Project—Part of Distributary System of Little Porcupine Unit.

by the war department and turned over to the interior department. Fort William Henry Harrison is a well equipped post adjacent to Helena, situated in a reservation of 1,040 acres; Fort Missoula is in the suburbs of Missoula and has a reservation of 1,577 acres at the fort and a timber reservation of 1,840 acres six miles away; and Fort Keogh, close to Miles City, is a remount station where cavalry horses are trained. The reservation embraces 90 square miles. The Custer Battlefield National Cemetery is one square mile in extent.

In national parks, July 1, 1910, were 1,100,177 acres. Glacier National Park, established in 1910, lies south of the international boundary line and embraces parts of Flathead and Teton counties. John Muir described it as one of the most remarkable parts of the continent, a place where one might find almost the springs of renewed life. At least, he said, a sojourn in this region should add ten years to the term of the traveler's earthly sojourn.

The scenery in Glacier Park surpasses the much visited places of Switzerland in grandeur and beauty. The park takes its name from numerous large glaciers; Lake McDonald, St. Mary's Lake and other lakes of unrivalled beauty are within its boundaries. Hotels have been erected, roads and trails made, and thousands of visitors annually enjoy in comfort an outing in this wonderful region.

National forests, or forest reserves, embraced 18,950,060 acres October 12, 1912, as follows:

NATIONAL FORESTS IN MONTANA.

National Forests	Area in Acres	Supervisor.	Address.
Absaroka	987,727	J. D. Warner	Livingston.
Beartooth	681,876	G. A. Smith	Billings
Beaverhead	1,365,000	C. K. Wyman	Dillon.
Bitterroot	1,153,119	W. W. White	Missoula.
Blackfeet	1,067,907	R. P. McLaughlin	Kalispell.
Cabinet	1,031,098	C. W. Griffin	Thompson.
Custer	512,940	Knox McAnally	Miles City.
Deerlodge	964,000	L. C. Stockdale	Anaconda.
Flathead	2,088,720	P. S. Bunker	Kalispell.
Gallatin	910,021	D. T. Conkliug	Bozeman.
Helena	920,148	J. B. Seeley	Helena.
Jefferson	1,175,920	W. S. Perrine	Great Falls.
Kootenai	1,622,647	Dorr Skeels	Libby.
Lewis and Clark	826,360	Scott Leavitt	Chouteau.
Lolo	1,189,475	Elers Koch	Missoula.
Madison	1,035,712	C. W. Hudson	Sheridan.
Missoula	1,330,040	Rutledge Parker	Missoula.
Sioux	117,350	C. A. Ballinger	Camp Crook, S. D.

Officer in charge, F. A. Silcox, District Forester, Missoula.

ACRES IN FOREST RESERVES BY COUNTIES.

County	Acres	County	Acres
Beaverhead	1,491,618	Lincoln	1,952,195
Blaine	29,240	Madison	839,234
Broadwater	221,653	Meagher	728,967
Carbon	427,008	Missoula	1,782,925
Cascade	421,242	Musselshell	24,480
Chouteau	6,303	Park	927,803
Custer	529,683	Powell	611,525
Dawson	.....	Ravalli	1,129,915
Deer Lodge	307,793	Rosebud	100,607
Fergus	204,499	Sanders	1,059,996
Flathead	2,240,902	Silver Bow	188,144
Gallatin	811,569	Sweet Grass	445,142
Granite	718,094	Teton	434,441
Jefferson	482,267	Valley	.....
Hill	.....	Yellowstone	.....
Lewis and Clark	862,815		
		Total	18,950,060

Nearly one-fifth part of the state of Montana has been withdrawn from settlement and disposition under the public land laws and put in forest reservations; and as long as this area, which embraces more acres than several of the original states, remains in reservation it will be undeveloped; lands so reserved cannot pass into private ownership and become producers of cultivated crops; and county and state governments can levy no taxes upon them. The prevailing opinion in the state is that the forest reserves are far more extensive than are necessary for any sane policy of conservation, and that, as now constituted, much agricultural and grazing land are included in them that should be restored to the public domain and become subject to entry under the homestead and other land laws.

The creation of forest reserves has not taken away the right to prospect the land within their boundaries for mineral and to locate mineral claims therein. Also under certain conditions homestead claims may be located in forest reserves. Wood for domestic purposes may be obtained by complying with easy conditions; stumpage is sometimes sold; and the privilege of grazing live stock is let for a limited number of animals at a stated prize per head. One-fourth of the revenue derived from these sources is given to the state of Montana, which divides it equally between the general school fund and the general road fund of the respective counties in proportion to the acreage each has in forest reserves. The total area in national forests in Montana is 18,950,060 acres and the total number of acres in the states of New Hampshire, Massachusetts, Rhode Island and Connecticut is 15,270,400 acres. The amount of revenue the state received in 1912 from an area greater than these four states was $59,816.37. In 1911 the amount was $74,021.04; $83,678.38 in 1910, and $78,172.37 in 1909. Persons desiring information concerning any matter relating to the national forests should apply to the United States District Forester, Missoula, Mont., or to one of the supervisors.

Lands withdrawn for reclamation projects, which are treated of elsewhere, aggregate about ..... acres. The state of Montana has applied for 233,670.84 acres under the Carey act, which have been segregated.

Lincoln County Forest.

The Carey act projects are described on another page. According to estimates of the general land office the state of Montana was granted 5,211,449 acres for the support of public schools, and 669,360 acres for higher institutions of learning and for other public purposes. Owing to the failure to make surveys of public land, the setting aside of forest reserves and other reasons the state has not yet come into possession of all the lands which are granted to it.

At the end of the last fiscal year, July 1, 1912, the unreserved and unappropriated public lands in Montana aggregated 29,053,995 acres. The greater part of these lands are fitted for agriculture or grazing and will ultimately pass into private ownership.

A compilation made from the reports of all the county assessors shows that the total number of acres assessed in 1912 was 20,382,209. Probably four-fifths of these lands remain in a natural condition, having been bought for grazing lands and never plowed. A large proportion is good farming land; and many of the large stock ranches have already been subdivided into farm tracts, which are now on sale.

The Northern Pacific Railroad Company received a grant of about 17,452,000 acres in Montana to aid in the construction of a railroad from Duluth to the Pacific Ocean. The grant has not been adjusted in full, but the company has received title to the greater part of the land granted, has sold many million acres and still owns and has for sale great quantities of land in the counties through which the main line runs. Information concerning prices and terms of sale of these lands will be furnished on application to the land commissioner of the Northern Pacific Railway Company, St. Paul, Minn.

Public Lands.

All business pertaining to the public lands must be transacted through the United States land office in the district where the land is located. Records of all entries and township plats and tract books can be consulted in the United States land office at the following places, where information will be furnished as to the manner of obtaining land: Billings, Bozeman, Glasgow, Great Falls, Havre, Helena, Kalispell, Lewistown, Miles City and Missoula. When it is not convenient for the land seeker to visit the land office, he may sometimes learn what tracts are vacant by consulting the nearest United States Commissioner.

Lands belonging to the government, unless reserved, are subject to entry under the public land laws. The methods of acquiring mineral, coal, timber and stone and desert lands, are set forth in circulars that may be obtained at the general land office, and at the local land offices. Lands within reclamation projects may only be secured by complying with the regulations made under authority of the national irrigation law. Special acts govern the manner of the disposal of certain lands that have been opened for settlement within present or former Indian reservations.

While numerous entries are made under other acts, the homestead law is the one under which the public lands of Montana are being rapidly taken

by settlers. The usual homestead is limited to 160 acres; but under the act approved February 19, 1909, providing for an enlarged homestead, 320 acres may be embraced in a claim if the land has been designated as of the character to which the act applies. The first section provides for the making of homestead entry for an area of 320 acres of non-mineral, non-timbered, non-irrigable public land in Montana and certain other states. The term "non-irrigable" is construed to mean land which, as a rule, lacks sufficient rainfall to produce agricultural crops without the necessity of resorting to unusual methods of cultivation, such as the system known as dry farming, and for which there is no known source of water supply from which such land may be successfully irrigated at a reasonable cost. Lists designating the lands subject to entry under the act are sent to the various land offices, and no entry can be allowed until such lists are received. This law is general application throughout that portion of Montana lying east of the continental divide, lists having already been received at the land offices covering over 26,000,000 acres. Lands entered must be reasonably compact in form and in no event exceed one and one-half miles in length. The fees shall be the same as those now required to be paid under the homestead law, the commissions being determined by the area of land embraced in the entry. Provision is also made that an additional entry of contiguous lands in amount sufficient to make the homestead claim embrace 320 acres may be made by an entryman who has not made final proof.

The three-year homestead law, which was approved June 6, 1912, is very liberal in its provisions and makes it easy for the homeseeker to acquire a tract of public land, as will appear from the circular of the interior department which is printed elsewhere.

This office has no maps of the vacant public lands and is not able to tell land seekers where to find them, and can only give general information as to the amount of vacant land in the respective counties as reported by the commissioner of the general land office at the end of the last fiscal year. Homeseekers may obtain information about opportunities to secure homesteads in the various counties by writing to the secretaries of the Commercial Clubs whose addresses will be found on another page. The railroad companies have had some of the records of the land offices examined, also have had many townships examined by agents for the purpose of collecting information of value to homeseekers; and the immigration agents of the Northern Pacific, the Great Northern, and the Chicago, Milwaukee & Puget Sound Railroads are prepared to direct settlers to townships where good lands may be entered under the homestead law. Address the two first named at St. Paul, Minn., and the last named at Chicago, Ill.

The following suggestions to land seekers are republished from a former report of this bureau:

"The questions most persistently asked are, "Where are the public lands of Montana located, and how can one obtain them?" "

In most instances a land map is also requested. Inquirers should understand first of all that maps of all the unoccupied land are to be consulted only in United States Land Offices, and that the primary requisite for making a location on any Government land is a personal inspection of the tract desired, which must be properly

described when the location is made. There is public land in every county in Montana, but it is not all suitable for cultivation. As a preliminary it is often advisable that intending settlers in a community delegate one of their number to make the trip of inspection, all contributing to defray the expense. In this manner much information may be gained and some time saved. Later the individuals of the party may make personal visits to the land, thus qualifying themselves to make the proper affidavits at the land office.

The many pamphlets issued by the railroads and various local districts, together with the reports circulated by the state, give comprehensive ideas of the attractions and advantages afforded and may be relied upon as trustworthy. After these have been carefully studied there comes the necessity of making a choice as to what part of the state is to be selected for the new home. And just here it is well to remember that Montana is the third largest state in the Union, having an average length from east to west of 535 miles, while from north to south it measures 275 miles. In this immense area there is included nearly every variety of soil and climate, as well as a diversity of occupation which includes practically every avenue of human endeavor except that of extensive manufacturing.

Information as to whether a particular tract of land is subject to entry may be obtained from the register or receiver of the land district in which the tract is located either through verbal or written inquiry but these officers must not be expected to give information as to the character and quality of unentered land or to furnish extended lists of lands subject to entry, except through plats and diagrams which they are authorized to make and sell."

The status of public land is constantly changing. New entries are made every day, and every business day is "a land opening" at each of the ten land offices, there being land for all comers, and no need to wait for notice of the opening to filing and settlement of lands within some reservation. From time to time tracts that have been withdrawn for reclamation or other purposes are restored to the public domain; a great many townships were surveyed last summer and will become subject to entry when the surveys are approved, and some lands have been released from forest reservations.

The following tables show in what counties and land districts are the unappropriated public lands within the state:

UNAPPROPRIATED PUBLIC LAND IN MONTANA, JULY 1, 1912.

(From Circular 149 of the General Land Office).

Land district and county.	Area unappropriated and unreserved.			Brief description of character of unappropriated and unreserved land.
	Surveyed	Unsurveyed	Total	
	Acres.	Acres.	Acres.	
Billings:				
Carbon	322,426	118,000	440,426	The general character of these lands is grazing, dry farming, timber, and stone and coal.
Musselshell	147,585	23,000	170,585	
Rosebud	86,683	40,000	126,683	
Yellowstone	362,923	184,000	546,923	
Total	919,617	365,000	1,284,617	
Bozeman:				
Broadwater	19,482	12,160	31,642	Principally arid.
Carbon	84,231	10,880	95,111	One-third good farming land; two-thirds mountainous.
Gallatin	32,706	11,139	43,845	One-fourth good farm land; three-fourths mountainous.
Jefferson	32,969	8,723	41,692	Principally arid.
Madison	124,039	112,682	236,721	One-fourth arid; three-fourths mountainous.
Park	81,586	1,742	83,328	One-third good farm land; two-thirds arid and mountainous.
Sweet Grass	332,945	.....	332,945	Grazing and mountainous.
Yellowstone	21,828	.....	21,828	Arid and mountainous.
Total	729,786	157,326	887,112	
Glasgow:				
Dawson	184,300	1,058,391	1,242,691	Grazing and farming.
Valley	2,118,415	2,746,287	4,864,702	Agricultural and grazing.
Total	2,302,715	3,804,687	6,107,393	
Great Falls:				
Cascade	80,872	46,140	127,012	Grazing and agricultural.
Chouteau	425,230	14,880	440,110	Do.
Fergus	16,034	.....	16,034	Broken, grazing land.
Hill	76,080	.....	76,080	Grazing and agricultural.
Lewis and Clark	17,628	7,280	24,908	Mountainous and agricultural.
Teton	390,568	35,060	425,628	Agricultural and grazing.
Total	1,006,412	103,360	1,109,772	
Havre:				
Blaine	772,760	1,663,260	2,436,020	Mountainous, grazing, and agricultural.
Chouteau	310,600	124,800	435,400	Do.
Hill	526,760	357,460	884,220	Do.
Total	1,610,120	2,145,520	3,755,640	
Helena:				
Beaverhead	254,550	224,701	479,251	Mountainous and grazing.
Broadwater	87,500	87,785	175,285	Mountainous and agricultural.
Cascade	9,782	14,133	23,915	Grazing and agricultural.
Deer Lodge	38,200	18,809	57,009	Mountainous, some agricultural.
Gallatin	6,728	.....	6,728	Mountainous.
Granite	75,500	61,709	137,209	Do.
Jefferson	1,759	120,035	121,794	Mountainous, grazing, and agricultural.
Lewis and Clark	727,177	108,333	835,510	Do.
Madison	298,944	617,468	916,412	Do.
Meagher	225,237	70,030	295,267	Do.
Park	5,226	20,424	25,650	Do.
Powell	102,466	225,900	328,366	Mountainous, some agricultural.
Silver Bow	80,629	16,299	96,928	Do.
Sweet Grass	8,045	.....	8,045	Do.
Teton	24,825	75,038	99,863	Do.
Total	1,946,568	1,660,664	3,607,232	
Kalispell:				
Flathead	110,969	.....	110,969	Valleys, mountainous, timber, grazing.
Lincoln	1,969	.....	1,969	Mountainous, timberland.
Sanders	43,556	.....	43,556	Agricultural, timber, valleys, and mountainous.
Total	156,494	.....	156,594	

UNAPPROPRIATED PUBLIC LAND IN MONTANA, JULY 1, 1912.
(Continued.)

Land district and county.	Area unappropriated and unreserved.			Brief description of character of unappropriated and unreserved land.
	Surveyed	Unsurveyed	Total	
Lewistown:	Acres.	Acres.	Acres.	
Chouteau ..	79,427	13,014	92,441	Broken, grazing.
Dawson	182,847	300,347	483,194	Do.
Fergus	758,227	966,563	1,724,790	Grazing, farming, timber, and mountainous.
Meagher	28,214	31,140	59,354	Farming and grazing.
Musselshell	257,336	56,750	314,086	Do.
Rosebud	40,020	61,490	101,510	Broken, grazing.
Sweet Grass	30,566	.....	30,566	Farming and grazing.
Total	1,376,637	1,429,304	2,805,941	
Miles City:				
Custer	1,640,849	2,171,278	3,812,127	Grazing and agricultural.
Dawson	923,673	1,666,949	2,590,622	Do.
Rosebud	957,440	352,000	1,309,440	Do.
Total	3,521,962	4,190,227	7,712,189	
Missoula:				
Beaverhead	2,408	60,014	62,422	Arid and grazing.
Granite	26,508	13,365	39,873	Mountainous, timber, mineral.
Missoula	83,305	1,317,029	1,400,334	Small valleys, mountains, timber, and mineral.
Powell	9,431	19,320	28,751	Mountains, timber, grazing, mineral.
Ravalli	1,000	96,532	97,532	Mountainous.
Sanders	13,554	13,890	27,444	Agricultural, timber, mineral, Mountainous.
Total	136,206	1,520,150	1,656,356	
State total	13,697,086	15,356,909	29,053,995	

UNAPPROPRIATED PUBLIC LANDS BY COUNTIES, JULY 1912.

County.	Surveyed	Unsurveyed	Total
Beaverhead	256,958	284,715	541,673
Blaine	772,760	1,663,260	2,436,020
Broadwater	106,982	99,945	206,925
Carbon	406,657	128,880	535,537
Cascade	90,654	60,273	150,927
Chouteau	815,257	152,694	967,951
Custer	1,640,849	2,171,278	3,812,127
Dawson	1,290,820	3,025,687	4,316,507
Deer Lodge	38,200	18,809	57,009
Fergus	774,261	966,563	1,740,824
Flathead	110,969	.....	110,969
Gallatin	39,434	11,139	50,573
Granite	102,008	75,074	177,082
Hill	602,840	357,460	960,300
Jefferson	34,728	128,758	163,486
Lewis and Clark	744,805	115,613	860,418
Lincoln	1,969	.....	1,969
Madison	422,983	730,150	1,153,133
Meagher	253,451	101,170	354,621
Missoula	83,305	1,317,029	1,400,334
Musselshell	404,921	79,750	484,671
Park	86,812	22,166	108,978
Powell	111,897	245,220	357,117
Ravalli	1,000	96,532	97,532
Rosebud	1,084,143	453,490	1,537,633
Sanders	57,110	13,890	71,000
Silver Bow	80,629	16,299	96,928
Sweet Grass	371,556	.....	371,556
Teton	415,393	110,098	525,491
Valley	2,118,415	2,746,287	4,864,702
Yellowstone	384,751	184,000	568,751
State Total	13,697,086	15,356,909	29,053,995

The descriptions in the circular of the general land office are of a general character and much of the land designated as grazing is really agricultural. The word "arid" is applied to lands that are suitable for dry farming and is used in the technical sense in which it is employed in the public land laws. There are no lands in Montana which the word "arid," used in its literal sense, truthfully describes. It should also be remembered that the greater part of the mountain area of Montana has been placed in forest reservations and consequently is not included in the lands described in the table.

Many tracts that were acquired only a few years ago under the homestead law have now a selling value of from $20 to $100 an acre; and many tracts now vacant are equally fertile and will become as valuable. There is danger in delaying the search for a claim because the merits of Montana lands are becoming widely known and public lands are being filed on more rapidly than in any other state. The acres of unappropriated public land July 1, 1908, were 46,532,440 and on July 1, 1912, were 29,053,995 acres; in four years 17,478,445 acres have been appropriated, nearly all by homesteaders. But there is still an abundance of good public land in Montana that may be acquired under the homestead law.

Fees for making a homestead entry in Montana vary according to the quantity of the land entered and whether it is situated within or without the 40-mile limit of the grant of public land to the Northern Pacific Railroad Company. For an enlarged homestead outside the limits of the railroad grant the fees are $22, and within the limits of the grant $34. For the homestead of 160 acres outside the limits of the railroad grant the fees are $16, and within the limits of the grant $22.

The following observations, reprinted from "Montana," a book issued by this bureau in 1912, will be of interest to prospective settlers:

The privilege of obtaining a piece of fertile farm land in Montana free, under the homestead law or, at low price by purchase, is a valuable one. The task, however, of making a farm out of raw land is not an easy one, and Montana is no place for the idler, the penniless, the feeble in will or in body. The rewards that result from earnest work in the intelligent cultivation of the soil are greater than elsewhere, but to turn raw land into a producing farm requires some capital. The new settler will need a house to live in, will have to put up fences, dig a well, build a barn, plow at least a part of his farm, procure seed, and provide food for himself, his family, and his live stock until after the first harvest. Settlers are helpful to each other, and though sometimes, money may be gained by working in the neighborhood this is not to be relied upon as a source of income, and the settler should come prepared to start a farm and to maintain himself without income from the land for the period of one year. He cannot mortgage a homestead.

Inquiries have been made by the Montana Agricultural Experiment Station regarding the amount of money the settler ought to have to meet the demands upon him when taking up an unirrigated farm. Seventy farmers were questioned, and the amounts mentioned by them ranged from $500 to

$6,500 with an average of approximately $1,000 as the minimum amount necessary to properly start an average unirrigated farm homestead. Much depends upon the man; but no one is urged to come to Montana to engage in farming who is not able to provide for his support until after the first harvest.

Usually the land is in condition to plow without expense for clearing. Where there are no springs or streams, water for domestic purposes is found at a reasonable depth in wells. No statement as to the depth a well must be driven to reach water can be made that would apply to all parts of the state. Perhaps the country near Havre, Chouteau County, represents an average condition; and the Havre Plaindealer names 12 new settlers who recently dug wells and found excellent water at depths ranging from 18 to 60 feet.

There is little wood for fuel in the prairie region but coal is cheap and abundant. The mountain regions are well timbered, and fire wood for domestic purposes may be obtained in the forest reserves by complying with the easy conditions imposed.

Prices of articles needed on the farm are not much, if any, higher at railroad points than in other western states. The circular of the Huntley project says on this point:

Lumber and other materials used for home building are: Fence posts cost 15 cents each or can be contracted for at still cheaper prices. Rough pine and fir lumber range in price from $22 to $30 per 1,000 feet. The cost of other materials are: Flooring, $26 per 1,000 feet; fence wire, $3.75 per 100 pounds; shingles, $4, per 1,000; lath, $5.50 to $6.50 per 1,000; lime, $2.50 per barrel; building paper, $1.50 per roll; cement, 80c a sack; pressed brick, $17.50 per 1,000; nails, $4 per keg. The cost of other necessities are: Flour, $3,50 per 100 lbs; sugar, $6.00 per 100 pounds; eggs, 30 cents per dozen; butter, 35 cents per pound; beef, 15 to 18 cents per pound; hay, alfalfa, $5 to $10, timothy, $14 per ton; grain, $1.50 per 100 pounds; potatoes, $1.50 per 100 pounds; seed potatoes, 75c a bushel. Mower, $25 to $50; plows, $14 to $20; farm wagons, $100; double harness, $40.

Those who wish to visit the state and to learn by personal observation of the opportunities it offers will find that the railroads sell at reduced rates tickets for home seekers and for emigrants' moveables, and they should bear in mind that the railroads follow the routes best adapted for easy grades and that it is often necessary to get up on the bench lands away from the tracks to get a just idea of the topography of the country.

CIRCULAR NO. 142.

THE THREE-YEAR HOMESTEAD LAW.

Department of the Interior,
Washington, July 15, 1912.

The Commissioner of the General Land Office.

Sir: Questions having arisen, through correspondence and otherwise, as to the construction to be given the several provisions of the new homestead law of June 6, 1912 (Public, No. 179), I have thought it advisable at this time to give the following general outline of my understanding of this act as affecting entries made prior to its passage, as well as those made thereafter; also to prescribe an order of procedure to be respected in matter of applications for reductions of the required area of cultivation and to promulgate a rule prescribing the amount of cultivation to be required respecting entries made prior to, but which are to be adjudicated under, the new law:

RESIDENCE.

(1) By the act of June 6, 1912 (Public, No. 179), the period of residence necessary to be shown in order to entitle a person to patent under the homestead laws is reduced from five to three years, and the period within which a homestead entry may be completed is reduced from seven to five years. The three-year period of residence, however, is fixed not from the date of the entry but "from the time of establishing actual permanent residence upon the land." It follows, as a consequence, that credit can not be given for constructive residence for the period that may elapse between the date of the entry and that of establishing actual permanent residence upon the land.

(2) Honorably discharged soldiers and sailors of the War of the Rebellion and also of the Spanish War and the suppression of the insurrection in the Philippines, entitled to claim credit under their homestead entries for the period of their military service, may do so after they have "resided upon, improved, and cultivated the land for a period of at least one year" after they shall have commenced their improvements. This is the requirement of section 2305 of the Revised Statutes, which is in nowise affected by the act of June 6, 1912. Respecting the cultivation to be required under said section it has been heretofore administered as requiring such showing as ordinarily applies in other cases preliminary to final proof, and as the new law exacts showing of cultivation of at least one-eighth of the area before final proof a showing should be exacted of a like amount for at least one year before final proof.

CULTIVATION.

(3) Prior to the passage of this act no specific amount of cultivation had been required respecting a homestead entry made under the general law; that is, an entry for 160 acres. With respect to every such entry section 2292 of the Revised Statutes had required proof of "cultivating the same for the term of five years immediately succeeding the time of filing affidavit." The words "the same" could refer only to the entry, and literally construed would require the cultivation of the entire tract entered for the term of five years. But a more liberal interpretation has properly obtained in the land department, and proof has been accepted upon a showing that the tract has been used in a husband-like manner, even though a smaller part of the entire entry had been actually cultivated than was in fact susceptible of cultivation. Furthermore, the long period of residence required (five years) has, in many instances, led to the acceptance of even a much smaller area of cultivation than husband-like methods and the character of the land would have reasonably justified. Under exceptional circumstances grazing land has been accepted as the equivalent of cultivation, where the lands were valuable only for grazing purposes. This can not be justified under any known definition of "cultivation," although some special legislation with reference to lands formerly within Indian reservations seems to require such a construction with respect to these particular lands. Under this special legislation lands formerly within certain Indian reservations have been first specifically classified as grazing lands, and then specifically opened to entry under the homestead law. It would be impossible to administer these special laws unless grazing is accepted as a compliance therewith, where it can be shown that the lands are in fact not capable of cultivation. The classification, however, was general, and where the general area was grazing in character it was so classified, even where it embraced local areas susceptible of cultivation. Where such lands are in fact physically and climatically susceptible of tillage, the cultivation provisions of the new homestead law must be applied. By that law it is required that the claimant "cultivate not less than one-sixteenth of the area of his entry, beginning with the second year of the entry, and not less than one-eighth beginning with the third year of the entry, and until final proof, except that in the case of entries under section 6 of the enlarged-homestead laws, double the area of cultivation herein provided shall be required, but the Secretary may, upon a satisfactory showing, under rules and regulations prescribed by him, reduce the required area of cultivation."

(4) The enlarged homestead acts here referred to (35 Stat., 639), (36 Stat., 531), authorize entries of 320 acres of lands designated for this purpose by the Secretary of the Interior, and requires proof "that at least one-eighth of the area embraced in the entry was continuously cultivated to agricultural crops, other than native grasses, beginning with the second year of the entry, and that at least one-fourth of the area embraced in the entry was so continuously cultivated beginning with the third year of the entry." The residence provisions of the homestead law (and now of the new act) were applicable to those entries, with an exception relating to certain lands in the States of Utah and Idaho, with respect to which the requirement of residence is omitted, and in lieu thereof the entryman is required to cultivate twice the area required under the general provisions of the act. The enlarged homestead acts were intended to apply generally to lands suitable for cultivation only under dry-farming methods, and under these methods it is customary to summer fallow a portion of the land one year, planting it the following year. Under the new law such summer fallowing can not be accepted as the equivalent of cultivation, and this was equally true of the old laws, which required the land to be "cultivated to agricultural crops other than native grasses." The new law, however, does reduce the required area of cultivation to not less than one-sixteenth during the second year of the entry, and not less than one-eighth during the third year of the entry, and until final proof, except that in the case of entries under section 6 of the enlarged homestead laws, where residence is not required, one-eighth of the area of the entry must be cultivated during the second year, and one-quarter beginning with the third year of the entry, and until final proof. In other words, the effect of the new law, with respect to the enlarged homestead acts, except in instances where residence is not required, is generally to reduce by one-half the amount of cultivation to agricultural crops other than native grasses, which had previously been required.

CHARACTER OF CULTIVATION.

(5) In reducing the period of residence required in perfecting title to a tract of land entered under the homestead law from five to three years Congress has required that it be shown that an actual cultivation has been accomplished of at least certain specified portions of the land entered. This amount has been fixed at one-sixteenth, beginning with the second year of the entry, and one-eighth the following year, and until proof is offered. In view of the liberal reduction in the period of residence making it possible to secure title in three years, which would require a showing of but two years' cultivation of one-sixteenth of the area entered, and an additional one-sixteenth for but one year, a mere breaking of the soil will not meet the terms of the statute, but such breaking or stirring of the soil must also be accompanied by planting or the sowing of seed and tillage for a crop other than native grasses.

(6) It should be noted that under the new law the period within which the cultivation should be made is reckoned from the date of the entry.

REDUCTION OF CULTIVATION.

(7) The Secretary of the Interior is authorized, upon a satisfactory showing therefor, to reduce the required area of cultivation. In the administration of this provision it is not believed that the physical or financial disabilities or misfortunes of the entryman should be the grounds of reduction, but the sole question should be as to whether, under the peculiar conditions governing the tract entered, the exaction of cultivation of this particular tract by any entryman to the amount required is reasonable. The actual special physical and climatic conditions of the land entered in each case must therefore determine whether the required amount of cultivation should be reduced. It is desirable that the entryman should, whenever practicable, know in advance what, if any, reduction can properly be made; and therefore, as a general regulation governing applications for reduction in area of cultivation, it is directed that all entrymen who desire a reduction shall file applications therefor during the first year of the entry and upon forms to be prepared and furnished by

the Commissioner of the General Land Office and distributed through the land offices. Where a satisfactory showing is filed in support of an application for reduction, you will submit the same with your recommendation in the premises; otherwise the application will be by you rejected subject to the usual right of appeal. The final granting of any reduction in area of cultivation rests with the Secretary of the Interior, who may in appropriate cases defer action until final proof.

EXCEPTIONS.

(8) The requirements as to cultivation do not apply to entries made for lands within a reclamation project under the act of June 17, 1902 (32 Stat., 388), nor to entries made in State of Nebraska under the act of April 28, 1904 (33 Stat., 547), commonly known as the Kinkaid Act. In such instances the existing requirements as to cultivation made by the acts named continue in force.

ENTRIES NOT REQUIRING RESIDENCE.

(9) In all entries made under section 6 of the enlarged homestead acts (35 Stat., 639, and 36 Stat., 531), under which residence is not required, the entryman must cultivate at least one-eighth of the land in the second year after date of the entry and one-fourth of it during each year thereafter until he makes proof, and the existing period of cultivation required under said acts is not reduced by the act of June 6, 1912.

PERMISSIBLE ABSENCES FROM THE HOMESTEAD.

(10) The law clearly requires that the homestead entryman shall establish an actual residence upon the land entered within six months after the date of entry. Where, owing to climatic reasons, sickness, or other unavoidable cause, residence can not be commenced within this period, the Commissioner of the General Land Office may, within his discretion, allow the settler such additional period, not exceeding in the aggregate 12 months, within which to establish his residence. It is not meant thereby that because, for the reasons stated, residence may not be commenced within the six-months' period, that the settler is authorized to delay the commencement of residence beyond the required period and after the cause no longer exists. It is not thought necessary to require an application in advance in order to entitle the settler to this additional privilege, but the full circumstances will be open to investigation and consideration upon contest.

(11) After the establishment of residence the entryman is permitted to be absent from the land for one continuous period of not more than five months in each year following, provided that upon absenting himself for such period he has filed in the local land office notice of the beginning of such intended absence. He must also file notice with the local land office upon his return to the land following such period of absence.

(12) In according such extended periods of absence the Congress has dealt liberally with the homestead entryman, and bona fide continuous residence during the remaining portions of the three-year period must be clearly shown.

(13) A second period of absence immediately following the first period, even though the two periods occur in different years, reckoned from the date of the establishment of actual residence, will not be recognized, as it was never contemplated that an absence was permissible in excess of six months in view of the specific provisions for contest provided for in section 2197 of the Revised Statutes. There should be at least some substantial period of actual continuous residence upon the land separating the periods of absence accorded under the statute. Only those protracted absences with respect to which notice has been given as required by the statute will be respected either in case of contest or on final proof. This law does not repeal or modify the acts of March 2, 1889 (25 Stat., 854), June 25, 1910 (36 Stat., 864), and April 30, 1912 (37 Stat.,——).

COMMUTATION.

(14) The privilege of commutation after 14 months' actual residence, as heretofore required by law, is unaffected by this legislation, excepting that the person

commuting must be at the time a citizen of the United States. It has heretofore been the practice to permit the making of commutation proof upon a homestead entry by one who had merely declared his intention to become a citizen of the United States and prior to his actual naturalization. This practice, however, is abrogated, and in instances where commutation proof is made after the passage of this act it should be exacted and shown that the claimant, if foreign born, has become fully naturalized. Commutation proof can not, however, be made on entries under the enlarged homestead laws, the reclamation act, or on entries made under any other homestead law which prohibits commutation.

DEATH OF THE HOMESTEAD ENTRYMAN.

(15) Where the person making homestead entry dies before the offer of final proof, those succeeding to the entry in the order prescribed under the homestead law, in order to complete such entry must show that the entryman had complied with the law in all respects to the date of his death, and that they have since complied with the law in all respects as would have been required of the entryman had he lived excepting that they are relieved from any requirements of residence upon the land. It follows, as a consequence, that where the entryman had not complied with the law in all respects prior to his death the entry will be forfeited, and upon proof thereof such entry will be canceled. This will apply to all entries made under the new law and those made prior to the passage of this act, where the entryman fails to elect to make proof under the law under which his entry was made.

ELECTION BY ENTRYMEN UNDER ENTRIES MADE PRIOR TO THIS ACT.

(16) The provisions of section 2291 of the Revised Statutes, as amended, in respect to the homestead period, are made applicable to all unperfected entries upon which residence is required, as well as to those made after June 6, 1912, where the entryman fails to elect to make proof under the law under which his entry was made within the prescribed time. This obligates the previous entryman to compliance with the law of June 6, 1912, respecting all of its provisions, the performance of which is exacted during the homestead period. As a consequence, while residence is reduced from five to three years, specific cultivation is exacted beginning with the second year after entry. Final proof of full compliance must be made within five years from date of entry.

RULE PRESCRIBED RESPECTING CULTIVATION TO BE SHOWN ON ENTRIES MADE PRIOR TO, BUT ADJUDICATED UNDER, NEW LAW.

(17) It may be that such prior entryman can not show that he had cultivated one-sixteenth of the area embraced in his entry beginning with the second year of the entry and one-eighth beginning with the third year of the entry and until final proof, although he may have had during the year preceding his offer of proof one-eighth or more of the area embraced in his entry under actual cultivation, and may have cultivated one-sixteenth during the previous year, thus accomplishing the amount of cultivation required as a general rule under the new law, but not in the order and for the particular years required by that law.

(18) By the section I am authorized, under rules and regulations to be prescribed by me, to reduce the required area of cultivation. Acting thereunder, I have prescribed the following rule to govern action on proof where the homestead entry was made prior to June 6, 1912, but, through failure of election, must be adjudicated under the new law:

Respecting cultivation necessary to be shown upon such an entry, in all cases where, upon considering the whole record, the good faith of the entryman appears, the proof will be acceptable if it shows cultivation of at least one-sixteenth for one year and of at least one-eighth for the next year and each succeeding year until final proof, without regard to the particular year of the homestead period in which the cultivation of the one-sixteenth was performed.

TIME FOR PROOF ON ENTRIES MADE BEFORE BUT ADJUDICATED UNDER NEW LAW.

(19) The new law also requires that the proof shall be made within five years from date of entry and if the entry is to be administered under that law the department is not authorized to extend the period within which proof may be made, but when submitted after that time, in the absence of adverse claims, the entry may be submitted to the board of equitable adjudication for confirmation.

(20) Respecting entries heretofore or hereafter made requiring payment for the land entered in annual installments extending beyond the period of residence required under the new law, the homesteader may make his proof as in other cases, but final certificate will not be issued until the entire purchase price has been paid.

(21) It may not be to the advantage of all entrymen to have their entries adjudicated under the new law, and the matter should be seriously considered before acting upon the election accorded previous entrymen under the statute.

(22) Unless they elect to make proof under the law under which their entries were made within the time accorded under the statute—i. e., on or before October 4, 1912—it will be incumbent upon the department to exact compliance with the new law, subject to the regulation herein above established.

The local officers will be furnished with copies hereof for their use when inquiries are made of them respecting the new law.

Very respectfully,

WALTER L. FISHER,
Secretary.

[Public—No. 179.]

AN ACT To amend section twenty-two hundred and ninety-one and section twenty-two hundred and ninety-seven of the Revised Statutes of the United States relating to homesteads.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That section twenty-two hundred and ninety-one and section twenty-two hundred and ninety-seven of the Revised Statutes of the United States be amended to read as follows:

"Sec. 2291. No certificate, however, shall be given or patent issued therefor until the expiration of three years from the date of such entry; and if at the expiration of such time, or at any time within two years thereafter, the person making such entry, or if he be dead his widow, or in case of her death his heirs or devisee, or in case of a widow making such entry her heirs or devisee, in case of her death, proves by himself and by two credible witnesses that he, she, or they have a habitable house upon the land and have actually resided upon and cultivated the same for the term of three years succeeding the time of filing the affidavit, and makes affidavit that no part of such land has been alienated, except as provided in section twenty-two hundred and eighty-eight, and that he, she, or they will bear true allegiance to the Government of the United States, then in such case he, she, or they, if at that time citizens of the United States, shall be entitled to a patent, as in other cases provided by law: Provided, That upon filing in the local land office notice of the beginning of such absence, the entryman shall be entitled to a continuous leave of absence from the land for a period not exceeding five months in each year after establishing residence, and upon the termination of such absence the entryman shall file a notice of such termination in the local land office, but in case of commutation the fourteen months' actual residence as now required by law must be shown, and the person commuting must be at the time a citizen of the United States: Provided, That when the person making entry dies before the offer of final proof those succeeding to the entry must show that the entryman had complied with the law in all respects to the date of his death and that they have since complied with the law in all respects, as would have been required of the entryman had he lived, excepting that they are relieved from any requirement of residence upon the land: Provided further, That the entryman shall, in order to comply with the requirements of cultivation herein provided

for, cultivate not less than one-sixteenth of the area of his entry, beginning with the second year of the entry, and not less than one-eighth, beginning with the third year of the entry, and until final proof, except that in the case of entries under section six of the enlarged-homestead law double the area of cultivation herein provided shall be required, but the Secretary of the Interior may, upon a satisfactory showing, under rules and regulations prescribed by him, reduce the required area of cultivation: Provided, That the above provision as to cultivation shall not apply to entries under the act of April twenty-eighth, nineteen hundred and four, commonly known as the Kinkaid Act, or entries under the act of June seventeenth, nineteen hundred and two, commonly known as the reclamation act, and that the provisions of this section relative to the homestead period shall apply to all unperfected entries as well as entries hereafter made upon which residence is required: Provided, That the Secretary of the Interior shall, within sixty days after the passage of this act, send a copy of the same to each homestead entryman of record who may be affected thereby, by ordinary mail to his last known address, and any such entryman may, by giving notice within one hundred and twenty days after the passage of this act, by registered letter to the register and receiver of the local land office, elect to make proof upon his entry under the law under which the same was made without regard to the provisions of this act."

"Sec. 2297. If, at any time after the filing of the affidavit as required in section twenty-two hundred and ninety and before the expiration of the three years mentioned in section twenty-two hundred and ninety-one, it is proved, after due notice to the settler, to the satisfaction of the register of the land office that the person having filed such affidavit has failed to establish residence within six months after the date of entry, or abandoned the land for more than six months at any time, then and in that event the land so entered shall revert to the Government: Provided, That the three years' period of residence herein fixed shall date from the time of establishing actual permanent residence upon the land: And provided further, That where there may be climatic reasons, sickness or other unavoidable cause, the Commissioner of the General Land Office may, in his discretion, allow the settler twelve months from the date of filing in which to commence his residence on said land under such rules and regulations as he may prescribe."

Approved, June 6, 1912.

STATE LANDS.

The State of Montana received liberal grants of land which are sold and leased on easy terms. The State Board of Land Commissioners have control the state lands and their chief executive officer is the Register of the State Land Office, who maintains an office in the Capitol at Helena, to whom all inquiries about state lands should be addressed.

State Lands by Counties, November 30, 1912.

COUNTY.	Acres.	COUNTY.	Acres.
Beaverhead	160,234.10	Lincoln	58,542.64
Blaine	143,828.68	Madison	133,988.28
Broadwater	20,601.27	Meagher	134,198.39
Carbon	55,526.22	Missoula	103,761.34
Cascade	111,320.84	Musselshell	99,660.97
Chouteau	332,272.07	Park	42,402.00
Custer	319,544.67	Powell	81,541.72
Dawson	349,193.30	Ravalli	31,094.11
Deer Lodge	13,704.70	Rosebud	213,727.85
Fergus	212,417.53	Sanders	55,958.54
Flathead	126,512.63	Silver Bow	15,475.20
Gallatin	55,429.36	Sweet Grass	94,189.67
Granite	16,660.06	Teton	218,231.20
Hill	236,183.42	Valley	179,379.12
Jefferson	31,926.42	Yellowstone	115,287.51
Lewis and Clark	119,377.05		
		Total	3,882,170.86

STATE LANDS.

For the information of prospective buyers or leasers of state lands the following circular has been issued by the State Board of Land Commissioners:

The common school and other lands approximate 3,870,000 acres, embracing grazing, agricultural, timber and coal land. Except within Forest or Indian reservations, sections 16 and 36 in each township are school lands, unless sold, and in very many townships other sections or parts thereof are also state lands.

No map or list of lands is published; a type-written list of state lands in any county will be furnished at legal cost of 20 cents per folio. (a folio is 100 words or figures). The cost of a list for a single county averages from $4 to $10 usually, it might exceed $10 if all the appraisals and classifications by 40 acre tracts was listed.

Except coal and some timber lands all state lands, after approved survey and appraisal are open to sale; for minimum price and conditions see pages 2 to 5.

Leases are obtainable as per conditions on pages 6-7-8.

Applications to buy or lease should be addressed, Register of State Lands, Helena, Montana.

Flathead Indian Reservation.

Title to sections 16 and 36 in each township in this reservation, unless allotted to Indians or U. S. Reclamation Service, vests in the state, and the law and regulations governing state land are operative.

For school sections lost to state because of allotments, lieu selections have been made, but until same are approved by the general land office at Washington the state can not sell or lease this lieu land.

At this date (Jan. 25, 1912) it is impossible to fix a date when the lieu selection will be approved. After approval they will be advertised for four weeks, then offered for sale or lease at public auction, at the County Seat.

Irrigated Lands.

Irrigated lands, reclaimed under Carey Act, are under jurisdiction of Carey Land Act Board.

Such lands located in Yellowstone, Sweet Grass, and Teton Counties are now on sale and inquiries about same should for the respective counties be addressed to:

Billings Land & Irrigation Co., Billings; Glass Bros. Land Co., Big Timber; Conrad Montana Land Co., Conrad.

Fees—Payable in Advance.

It is the duty of the Register to collect in advance for work done in his office, fees as follows:

Filing application to lease for permit	$ .50
Filing application to purchase	.50
Accepting and approving bond	1.00
Issuing lease or permit	1.00
Issuing permit to cut live timber	1.00
Issuing each patent or certificate of purchase	2.00
Approving and recording assignment of lease or certificate of sale	1.00
Patent for town lot	2.00
Deed for right-of-way, easement, etc.	3.00
Certified copy of certificate of purchase, lease or patent	2.00
For lists or copies not specified above, per folio	.20
For certificate	1.00

INFORMATION FOR PROSPECTIVE BUYERS OF STATE LANDS, OR TIMBER THEREON.

Regulations of Board of Land Commissioners, Etc.

The fixing of date for a sale is discretionary with the Board. The law (Sec. 38) requires a sale held "in each county in the State at least once every two years."

Formal Application to Buy.

Those who wish to buy should make formal application promptly on blanks which will be supplied. The receipt of such application, with fee (50 cents), insures the land being offered at next sale held in county where the land is. Advance notice of sale will be mailed to applicant, and lessee.

Leased Land Subject to Sale.

Except coal and timber land all leased land is subject to sale at any time, but unless an application to buy is filed, leased land will not be offered at a sale.

Preference to Lessee.

The holder of a lease made prior to March 19, 1909, under Sec. 2174, Revised Codes 1907, "shall if bidding an equal amount be given preference."

The lessee must attend sale or be represented and bid, or he can not be given preference.

Right of Way Area.

Where the State has been paid for rights of way for railroad, reservoir, or other use, a deduction for the area thus covered is made from the acreage to be sold.

But no deduction will be made from acreage for any right of way for public roads or other easement that was acquired without remuneration to the State; the buyer of land on which is such easement must pay for the area thus covered.

In event such right of way is abandoned the area reverting will belong to the person who bought from the State, or his assigns.

PARTIAL DIGEST OF LAW, RE-SALE OF LANDS.

(Figures in brackets refer to section of Chap. 147, Laws 1909, the land law, copies of which will be furnished on request.)

Conditions of Sale.

Price.—No land can be sold at less than ten dollars ($10) per acre and it must bring the appraised price when same exceeds $10 per acre (37).

Terms.—Fifteen per cent (15%) of purchase price in cash on day of sale, the balance in twenty equal annual payments bearing five per cent interest per annum; except a purchase of $100 or less must be paid in full at the sale. Payments of one or more annual installments may be made at any time, but if made on other than a due date, then interest which would be due at next payment must be paid (42).

Can Sell Only to—Citizens of the United States or those who have declared their intention to become such, or domestic corporations, actual settlers, or persons who will improve the land, or to the U. S. Reclamation Service (34).

Manner and Place of Sales.—All sales must be at public auction only, and held at Court House of county where the land is (38), after advertising a description of the land, place, time and terms of sale, once a week for four consecutive weeks in a paper published in said county (39).

Quantity Sold to One Person or Corporation.

The Board of Land Commissioners may sell in such parcels as they deem best (34), provided each quarter section or such portion thereof as belongs to State shall be offered for sale separately; smaller tracts only may be sold when impossible to sell as above or when thereby a larger price may be obtained. Not more than 160 acres of land classified as agricultural susceptible of irrigation (Agr. A); nor more than 320 acres classified as agricultural not susceptible of irrigation (Agr. B); nor more than 640 acres classified as grazing shall be sold to one person or corporation.

(Note: A person who has, since March 19, 1909, bought from the state the amount allowed is barred; one who has had a certificate of purchase assigned to him since March 19, 1909, is treated the same as if he had bought directly from the state.)

Provided further that if land is within the area of a U. S. Reclamation project the quantity must conform with classification of farm units by the U. S. and be also subject to regulations of the Reclamation Service as to acquisition of water therefor (34).

Purchaser Must Pay for Improvements Made by Lessee.

The buyer of lands on which a lessee has improvement must pay such lessee a reasonable value therefor, to be mutually agreed on if possible, otherwise to be appraised by State Land Agent, provided, when not detrimental to land lessee may elect to remove in 90 days (44, 69, 79, 80 and 81).

Certificate of Purchase—Security.

No security for deferred payments is required. As soon as the fifteen per cent cash payment is made a certificate of purchase is issued (fee $2.00), unless the buyer has failed to pay owner of improvements, if any.

Certificates of Purchase Are Assignable.

Such assignment must be in writing, executed in original and duplicate and be sworn to before notary; if the man is unmarried it must so recite, if married his wife must join in assignment.

The Certificate of Purchase, with original and duplicate assignment must all be sent to Register of State Lands for approval and record, after which the contract and one assignment will be returned. Fee $1.00.

Certificates Cancelled.

Within three years after issue Board may, on ground of fraud, by giving notice, cancel (48).

Taxation.

All lands, or any interest therein, sold are subject to taxation. A list is furnished each County Assessor March 15, yearly, of land sold during year ending first Monday in March, the name of buyer, the price and amount actually paid; the law provides that "no purchaser of state lands shall be taxed for a greater percentage of the value of the land than the ratio which the amount actually paid on the purchase price bears to the total purchase price (50).

Confirmation of Sales.

No sale is completed until approved by the Board of Land Commissioners (40).

Default in Payment.

Default for a period of thirty days renders contract forfeitable, upon notice lands may revert to state and payments be forfeited (41).

Reservations of Coal, Oil and Gas, and Right-of-Way.

All leases and conveyances of state land shall contain a reservation to the State of all coal, oil and gas contained therein (34), also of a right-of-way granted to United States Government for ditches, canal, tunnels, telephone and telegraph lines (31).

Patent.

Patent (fee $2.00), will be issued when purchase price, interest if any, and fee are paid, and the Certificate of Purchase delivered to Register in proper form (45).

Coal Lands Cannot Be Sold but May Be Leased.

All coal areas which are so defined by the U. S. Geological Survey or other government authority must be recognized as coal lands, until otherwise determined; and no such lands shall be sold, but they may be leased on a royalty basis (as per Sec. 70), provided, the surface rights of such land may be sold or leased for agricultural or grazing purposes (28).

Land With Timber on, How Sold.

Whenever the soil on any timber land is of such character that when cleared it would make, good agricultural land, the land may be sold with the timber thereon as timber lands (34), otherwise the timber only can be sold.

Timber Cutting Permits—Price, Terms.

No sale of live timber shall be made at less than three dollars ($3.00) per thousand, and no live timber less than eight inches in diameter twenty feet from the ground shall be sold or permitted to be cut. There must be a reappraisal and estimate (after March 19, 1909), of the timber by the State Forester, before granting a permit (53).

No permit can be granted except to the highest bidder at a public sale held at the State Capitol, after published notice as provided for state lands (54).

The State Forester will cause all live logs cut to be scaled and report amount on first day of each month and a sight draft will then be drawn for sum due (56-57, as amended 1911.)

Permits for cutting dead standing and down timber, may be issued by State Forester, under regulations prescribed by the Board. Apply to State Forester. (Sec. 55, as amended, 1911 session, page 258). Permits for timber in small quantities to be used by citizens of Montana for domestic, building and fuel purposes can be issued by State Forester. (Chap. 119, 1911 Laws, page 260.)

All timber sold shall be cut and removed under such rules for preservation of standing timber and prevention of fires as are prescribed by the State Board of Land Commissioners.

Land in City or Town, or Three Miles Thereof.

State land in a city or town or three miles thereof may be divided into lots or tracts of five acres or less and sold as are other state lands.

Right of Way for Public Use.

The State Board of Land Commissioners may grant the right of way on state lands, on such terms as may be agreed upon, for any ditch, reservoir, railroad, private road, telegraph or telephone line or other public use; such lands revert to State when cease to be used for such purpose (33). Application for right of way must be made on forms which will be supplied by the Register.

For Irrigation.

State lands may be withdrawn from sale pending completion of an irrigation system for same as per Chap. 123, Laws 1911, page 338.

LEASES—INFORMATION FOR PROSPECTIVE LESSEES.

Certain Lands on Which Yearly Permit Only Given.

On land that has not been surveyed, or the survey not approved, only a special form of yearly lease (called "Permit") is issued. Such permit by paying the yearly rental in advance may be renewed four times, if there are no other applicants, or unless in the meantime the land is surveyed, approved and appraised after which it may be leased for a five years period.

Lands Within Forest Reservation.

Sections 16 and 36 and others within Forest Reserves to which title vested in state prior to creation of the reserve are subject to same regulations as other state land; otherwise the U. S. Forestry Department has jurisdiction and when existing lease expires the State can not renew.

Amount Leased to One Person or Company.

Not exceeding one section can be leased to one person or company. (Sec. 11, Enabling Act).

How Leases Assignable.

Leases are not assignable except on application to the State Land Register for permission, and on forms he will furnish.

Price Per Year.

The rental for grazing use ranges ordinarily from $40 to $100 per section per annum. It can not be less than (5%) five per cent, per annum of leasing appraisal.

Rental for agricultural use is higher than for grazing. A part of section may be leased for grazing and part for agriculture in one lease. A lease for grazing only may, on application and paying additional rental, be changed.

Coal Leases.

The law (Sec. 70), provides a minimum on coal leases of ten cents per ton royalty, payable monthly.

Lease to Obtain Stone, Coal, Petroleum,

gas, or other minerals, may be given for such period (not exceeding five years), and royalty as the Board deem best (62).

Lease Period.

No land shall be leased for more than five years (63). On land unsurveyed or unappraised, since Oct. 1, 1908, leases are for one year.

Terms.

Rental is payable yearly in advance (66); royalty as provided in lease.

Security.

Bond, with two sureties, in amount at least four times annual rental, which bond must be approved by the County Treasurer, then sent to Register, is required, on five year leases; on royalty leases amount is discretionary with the Board.

Default in Payment.

Default in payment works a forfeiture at option of Board after thirty days' notice to lessee and his bondsmen; if delinquent 60 days after notice unless extension granted, the Register must declare forfeiture and may reject lessee, but that does not

release the bond, provided any creditor or the bondsman may pay rental and take assignment (fee $1.00), of the lease (66-76).

Improvements.

A lessee or purchaser of lands on which are improvements owned by a former lessee, must pay said owner reasonable price therefor, (44, 69, 81), unless owner elects to remove. Cultivation (44) and a water right under certain conditions (79), are each improvements. When parties cannot agree on value of improvements the State Land Agent will appraise.

May Remove Improvements.

Lessee may dispose of or remove such of his improvements as are capable of removal without damage to the land within 90 days after expiration of lease (80).

Renewals.

Renewals may be applied for thirty days prior to expiration of lease (68). Other applications for same land received before expiration or arrival of renewal papers in proper form with remittance must be considered and in such event an opportunity to mail a bid on or before a named date will be given competitors not residing at Helena, if the competing parties all live in or near Helena, a date for open bidding at the land office will be fixed.

No preference is given lessee for a renewal, the law protects him as to value of improvements placed on the land, but if he wishes to renew and there is another applicant both must make competitive bids.

Unleased Land Offered.

At every public sale all unleased land that has been offered but no bid received will be offered for lease to the highest bidder (63).

Cancel for Fraud.

Fraud, deceit or misrepresentation is a cause for cancellation (83).

Trespass.

Those who use or occupy state land more than thirty days after expiration of lease, or occupy or in any manner enter upon state land without permission shall be regarded as Trespasser and on conviction shall be fined from $25 to $100 for each offense and each day shall constitute a separate offense (103), and shall pay rental.

Both the purchase and rental of state lands offer excellent opportunities for the homeseeker. Those who are not able to buy land should consider the favorable terms on which lands may be leased. Mr. F. H. Ray, register of the state land office, contributes the following article upon the advantages of renting:

Very Low Rent for State Lands.

The fair terms and low rental of state land leases afford splendid opportunities for those of limited means to coin energy and farming ability into dollars.

Approximately there are 4,000,000 acres of State land subject to lease, for a period of one to five years, the larger part of which is tillable. The rental for grazing use varies from $40 to $100 per section (640 acres) per year, while for agricultural use it is ordinarily from twice to four times as much. Or, stated differently, for raising crops, the rate on most of the tillable land is the very low cost of 20 cents to 40 cents per acre per year. This is less than the interest at 5 per cent on the valuation of $10 per acre; there are no taxes.

Leases are usually for a five year period, though may be for one year, and are made subject to sale of the land at public auction. In event the land is sold, or lease not renewed, the law amply protects the lessees for value of improvements belonging to him, and possession is not given purchaser of leased land until January first after sale unless the lease expires before. A part of section may be leased for grazing and part for agriculture in one lease. A lease for grazing only may, on application and paying additional rental, be changed.

A lessee or purchaser of lands on which are improvements owned by a former lessee, must pay said owner reasonable price therefor, unless owner elects to re-

move. Fences, buildings, plowing, crops and a water right under certain conditions are each improvements. When parties cannot agree on value of improvements the State Land Agent will appraise.

Lessee may dispose of or remove such of his improvements as are capable of removal without damage to the land within 90 days after expiration of lease, on application to the Register, be granted longer time.

Renewal of Leases.

Renewals may be applied for thirty days prior to expiration of lease. Other applications for same land received before expiration or arrival of renewal papers in proper form with remittance must be considered and in such event an opportunity to mail a bid on or before a named date will be given competitors not residing at Helena; if the competing parties all live in or near Helena, a date for opening bidding at the land office will be fixed.

No preference is given lessee for a renewal, as the law protects him as to value of improvements placed on the land, but if he wishes to renew and there is another applicant both must make competitive bids.

Outside of Indian and Forest reservations the State has land in almost every township, much of which is constantly open to lease. As new leases are being made and old leases expiring daily it is not practicable to publish a list, but information about land in specified townships will be given on application to the Register of State Lands, Helena.

The Value of a Lease.

What is the worth in dollars of these land opportunities awaiting farmers in Montana?

Compared with a group of six good eastern states what difference is there in favor of Montana?

Let the facts as shown by United States Government reports answer.

Take Ohio, Indiana, Illinois, Iowa, Michigan and Wisconsin as an eastern group for comparison. Each farm is a food factory owned or rented by the farmer. The farmer owning land has an investment on which must be reckoned interest, plus taxes, as a fixed yearly charge; if he is a lessee the rental will not be less than interest on taxes. Now the average value in 1910 of an acre of farm land (including improvements) in the above six states was $61.51. Interest on this at 6 per cent is $3.69, taxes estimated 16 cents, and the total yearly fixed charge is $3.85 per acre. Compare this with the rental of Montana State land. To be eminently fair put two acres non-irrigated land in Montana against one acre in the eastern states, not because the Montana land is less fertile, but because the rainfall is not as much and the approved practice of tilling our non-irrigated land is to cultivate a crop every other year, so as to store the one year's rainfall for the next crops benefit. On this basis the average rental cost, no taxes, for two acres in Montana is 65 cents, as against the interest and tax cost of $3.85 for one average acre in the six eastern states, or, in other words, the two Montana acres cost one-sixth as much as the one eastern acre.

What is the yearly output of these acre food factories in dollars?

The average acre yield in the six eastern states in 1910, and on an average for ten years ending with 1910, of corn or wheat was under $16 and still less of oats and hay. The average non-irrigated Montana acre yields $16 in wheat each alternate year, which is equal to $16 per year for every two acres. The difference, then, in favor of the rented Montana non-irrigated two acres as against one eastern acre is this, the Montana acres produce more dollars at one-sixth the cost for interest and taxes, or on a basis of 320 Montana acres as against 160 eastern acres, the Montana yearly rental would be $104, while the fixed charge for interest and taxes on the eastern farm would be $616.

The average wheat yield in bushels per acre credited to Montana by the last United States Census is 30.6; this includes irrigated land and is too low for irrigated and too high for non-irrigated though there are very many instances of higher yields on non-irrigated lands.

The average farm value per acre of crop yields for the six eastern states above in 1910 was, viz:

Corn	$15.75	Wheat	$15.84
Hay	13.24	Oats	10.80

The average for ten years ending 1910 was somewhat less.

A careful study of official weather records shows that the eastern farmer will suffer more from drouth and excessive rain, than the Montana farmer suffers from deficient rainfall.

The renter of Montana State land has an opportunity to buy same at public auction on the very easy terms of 15 per cent cash and the balance in twenty equal annual payments at 5 per cent interest.

CAREY ACT LANDS.

The irrigable lands in Montana have been estimated at 8,000,000 acres. Many of the first settlers had seen the irrigated farms of the Salt Lake basin and of California and supposed crops would not grow in Montana without irrigation. Accordingly when they began farming they selected places in valleys, usually near mining camps, where the products were marketed, where water was easily obtained. Farming of unirrigated land was a later development; it has been learned that where native grasses grow, cultivated crops may be grown by the proper system of cultivation; but it is claimed for irrigated lands that they produce larger crops, a greater variety of products, and a crop every year, whereas the dry lands should be cropped only every other year.

The first irrigation enterprises were the digging of ditches by individual farmers to conduct sufficient water from adjacent streams to irrigate small tracts. When tracts owned by several farmers were to be irrigated, the advantages of co-operation were realized and all who were to be benefitted united and formed a partnership or an irrigation canal company. In labor or money each contributed his proportionate share of the cost of the enterprise and secured the right to a specified amount of water. A few companies acquired large tracts of land, brought water from a distant point, and divided the tract into farms that were sold with water rights. As population increased, settlements were extended; lands within Indian reservations were ceded and occupied; railroads were constructed and by making possible the shipment of products to market, encouraged farming; and the acres irrigated by ditches owned by individuals, by partnerships, by co-operative companies and by land companies greatly increased. In the course of time the greater part of the land to which water could be brought at moderate cost became irrigated. The construction of large and costly ditches that presented engineering difficulties was not feasible with limited capital and with defective laws relating to water, capital found more attractive investments than the construction of irrigating canals in a country so sparsely settled; and some thought that the limit had been reached of the land that would be irrigated.

The demand for irrigated land, however, did not cease and a public sentiment sprang up in favor of the state or federal government undertaking irrigation enterprises that were too large for private capital to engage in. The passage of the Carey act was the result of this agitation. The law provides that each semi-arid state shall be given such amount of land not

to exceed one million acres as it shall cause to be reclaimed, occupied and, in part, cultivated. Many of the most successful irrigation enterprises in the west have been Carey act projects. The state itself does not reclaim the land but avails itself of the benefit of the law by means of contracts made with construction companies. At the request of the state the federal government segregates the tracts desired; the state then makes a contract with some reliable company to construct the necessary reservoirs and canals; when the work is completed the land is patented to the state and in turn patented to the settler who has complied with the provisions of the law. The construction company is paid the charge fixed for the water. At all times the enterprise is under the supervision of the state authorities and no land is offered for sale unless an ample supply of water is assured. When the land is all disposed of, the water users take control of the canals and arrange for their maintenance.

Considerable progress has been made toward the securing of the full amount of lands Montana may obtain under the Carey act. Segregation of lands has been asked for as follows:

MONTANA CAREY ACT PROJECTS.

List No. 1	Billings Project	10,472.88	Approved.
List No. 2	Big Timber Project	7,864.78	Approved.
List No. 3	Big Timber Project	11,153.73	Approved.
List No. 7	Billings Project	4,585.23	Approved.
List No. 8	Valier Project	60,461.41	Approved.
List No. 9	Big Timber Project	1,360.00	Approved.
List No. 10	Teton Project	55,393.83	Not Approved.
List No. 11	Big Timber Project	1,709.32	Approved.
List No. 12	Valier Project	3,596.58	Approved.
List No. 13	Musselshell Project	20,334.21	Not Approved.
List No. 14	Valier Project	21,522.15	Approved.
List No. 16	Ruby River Project	6,825.01	Not Approved.
List No. 21	Flatwillow Project	7,768.80	Not Approved.
List No. 22	Little Missouri Project	20,622.91	Not Approved.
	Total	233,670.84	

Total acreage in lists approved	122,726.08	
Total acreage in lists pending	110,944.76	
Total	233,670.84	acres
Patented land in List No. 1	8,192.88	acres
Patented land in list No. 2	7,356.12	acres
Total acreage patented	15,549.00	

STATUS OF CAREY ACT LANDS NOVEMBER 30, 1912.

Acres sold.		Acres unsold.	
Billings Project	7,716.14	Billings Project	7,341.97
Big Timber Project	4,572.94	Big Timber Project	17,514.89
Valier Project	25,051.49	Valier Project	60,528.65
Total acreage sold	37,340.57	Total acreage unsold	85,385.51

The charge for water rights per acre is as follows: in the Billings project from $28 to $48 according to location; in the Valier project from $40 to $50; and in the Big Timber project $60.

Applications for a large part of this acreage are awaiting the approval of the Department of Interior at Washington. Of the lists that have been approved a large area has been fully reclaimed and is either now occupied or is ready for settlers.

The Billings Land and Irrigation Company (Lists 1 and 7) was the first

project that was completed. It reclaimed a large tract of fine land on the Billings bench, Yellowstone county, that is now occupied by a highly prosperous farming community. Where a few years ago there was not one farm house are now scores of dwellings on well improved farms. Ten school houses in as many school districts bear evidence to the transformation that has resulted form bringing water upon the land. Twice as many people as now inhabit this project may find there splendid farms.

The lands in the Billings project are uncommonly fertile and have the advantages of being located close to railroad shipping points and of being near the growing city of Billings. Prices run from $40 to $65 per acre and the terms are one-fourth cash and the balance in ten installments with interest at 6 per cent. Full particulars may be had on application to the Billings Land and Irrigation Company, Billings, Montana.

The Big Timber project (Lists 2, 3. 9, and 11) has reclaimed lands on both sides of the Yellowstone river in Sweet Grass county. Big Timber on the Northern Pacific Railway is the shipping point. The northern tract embraces sunny slopes near Big Timber Creek and 7,356 acres have been patented. The entire system of reservoirs and canals is complete except for the laterals that will be dug as settlement is extended. Upon the north side system has been expended for various purposes a total of $350,000. About 4,000 acres are settled upon, comfortable dwelling houses have been erected on many tracts, much land has been put in cultivation and splendid crops have repaid the efforts of the settlers. Lands in this project have not long been ready for occupancy, but the first comers have been so successful that there is no room to doubt that in a few years, after more settlers shall have come in the Big Timber project will be the home of one of the most prosperous communities in the United States. The lands are adapted for fruit growing as well as farming. Oats 162 bushels to the acre, barley showing a cash return of $48 an acre, wheat from 20 to 40 bushels, flax running to 25 bushels an acre, and potatoes remarkable for size and quality are reported as having been raised on lands in this project. As in other Carey Act projects any citizen of the United States, or one who has declared his intention to become a citizen, and is over the age of 21 years may file on lands. He may enter 40 or 80 or 120 or 160 acres, and the fact that he has already used his homestead right does not prevent his taking land under the Carey Act. The easy requirements of the law as to residence and cultivation must, of course, be met. In addition to the Carey Act lands the company owns deeded lands that may be bought without restrictions as to cultivation and residence. The price of lands within the project are $60 per acre. Full information concerning these lands may be had on application to Glass Brothers Land Company, Big Timber, Montana.

The Valier project (Lists 8, 12, and 14) is located near the center of Teton county in the northern part of the state. Several reservoirs impound waters of streams in Marias river drainage basin. The largest reservoir is Lake Francis, adjacent to the town of Valier, with a capacity of about 112,000 acre feet. About 477 miles of main canals and laterals have been built and preparations are being made to build additional miles. Already two

hundred and sixty settlers have purchased homes within the project; and when these lands are brought into cultivation—from Bynum to Valier and on to Conrad—a succession of fine farms will extend and form together one of the largest bodies of cultivated lands in the state.

About 60,000 acres of Carey Act lands are now ready for settlement and open to entry in the Valier project and the company has for sale many acres of deeded irrigated land that are not subject to the requirements as to entry and residence, nor restricted as to quantity that may be secured by one person, as are the lands reclaimed under the Carey Act. The deeded lands are held at $50 an acre. The terms upon which a settler may enter a claim for the Carey Act lands in this project are the payment of 50 cents an acre, which goes to the State of Montana, and $40 an acre to the company as payment for water. The settler has 14 years in which to pay this total of $40.50 per acre as follows: The sum of $5.50 per acre must accompany the application at the time the filing is made; the balance is payable in fourteen equal yearly installments, with interest at 6 per cent per annum on deferred payments.

The lands within the Valier projects are very fertile and large crops are raised on all tracts that are in cultivation. A. J. Kemper has raised a crop of barley that yielded over 50 bushels to the acre and on 40 acres 3,760 bushels of oats, an average of 94 bushels to the acre. B. Bockma has raised sugar beets on an experimental patch at the rate of 18 tons to an acre. On 20 acres of irrigated land John Kroeze harvested a crop of oats that averaged 112 bushels to the acre.

The Valier project has good railway facilities. The Montana Western Railroad runs directly through the tract, the Great Northern Railway along the eastern border, and the Chouteau branch of the Milwaukee may build into it. At Conrad the Montana Western connects with the Shelby and Great Falls branch of the Great Northern over which run the Kansas City to Seattle trains of the Burlington system. Great Falls, the largest city of northern Montana and an important railroad center, is only 70 miles from the Valier project.

Near the center of this project is Valier, a town beautifully situated on Lake Frances; it is only an infant in years, but the amount of business transacted daily, the improvements that have been made, and the number and character of business houses and private residences that have been erected would be creditable for a town ten times as old .

Information concerning lands in the Valier project may be had on application to Clinton, Hurtt and Company, Valier, Montana.

The other Carey Act projects are not so far advanced as to have land for sale. Information concerning any of them may be had on application to A. W. Mahon, State Engineer, Helena, Montana.

The names of these uncompleted projects and the locations of the lands that are to be reclaimed are as follows: Teton Co-operative Reservoir Company, in Teton and Chouteau counties; Musselshell project in Musselshell county; Ruby River project in Madison and Beaverhead counties; Flatwillow project, in Fergus County; Little Missouri project in Custer county.

GOVERNMENT RECLAMATION PROJECTS.

(By H. N. Savage, Supervising Engineer, U. S. Reclamation Service.)

Previous reports and publications of this bureau have contained discussions of the operations under the Act of June 17, 1902, known as the reclamation Act; the development of Government irrigation projects in Montana under the Reclamation Act has been outlined up to and including the year 1910. The Reclamation Act has now been in force for more than ten years, and its purposes as well as the main features of the completed and partly completed projects are well known to people of the state; it is intended in this article therefore to review briefly the present status of Government irrigation in Montana and to describe the projects constructed in whole or in part and operated during the last two years.

The Government reclamation projects, including the Indian projects, with a tabulated statement of expenditures to June 30, 1912, and allotment of funds, follow:

PROJECT.	Building cost to June 30, 1912.	Expenditures authorized to June 30, 1912.
Huntley	$ 918,034.55	$1,205,000.00
Milk River	943,412.86	4,921,000.00
Sun River	861,702.18	4,100,000.00
Lower Yellowstone	2,772,697.13	3,515,000.00
Indian Reclamation Projects.		
Blackfeet	$596,459.13	$650,000.00
Flathead	946,621.47	950,000.00
Fort Peck	196,901.87	200,000.00

Certain acts of congress approved in 1910, 1911, and 1912 have made possible greater development in irrigation works in Montana than could have been provided for under the original Reclamation Act and acts amendatory thereto up to 1910. These are:

The act of June 23, 1910—an act providing that entrymen for homesteads within reclamation projects may assign their entries upon satisfactory proof of residence, improvement and cultivation for five years, the same as though said entry had been made under the original homestead act.

The act of June 25, 1910—"an act to authorize advances to the Reclamation Fund and for the issue and disposal of certificates of indebtedness ($20,000,000) in reimbursement therefor and for other purposes." (Under "other purposes" this act includes the repeal of Section 9 of the act approved June 17, 1902, which provided that the major portion of the receipts from any state to the Reclamation Fund should be expended in that state.) (That no entry shall be hereafter made and no entryman shall be permitted to go upon lands reserved for irrigation purposes until the secretary of the interior shall have established the unit of acreage and fixed the water charges and the date when water can be applied and made public announcement of the same.)

The act of June 25, 1910—an act granting leaves of absence to home-

Huntley Project—Second Cutting of Alfalfa on Aisdale Homestead.

steaders on lands to be irrigated under the provisions of the Act of June 17, 1902.

The act of April 30, 1912, for the relief of homestead entrymen under reclamation projects in the United States.

The act of June 6, 1912—the three-year homestead law.

The act of August 9, 1912, providing for patents on reclamation entries, the designation of bonded fiscal agents or officers of the Reclamation Service on reclamation projects to whom all building and other charges may be paid.

DEPARTMENT OF THE INTERIOR, UNITED STATES RECLAMATION SERVICE, NORTHERN DIVISION.

Irrigable Lands.

United States Reclamation Service Projects.

PROJECTS.	Est. total irrigable area	Public Lands			Deeded Lands (acres)	State Lands (acres)
		Entered	Unentered	Totals		
Huntley	32,405	20,646	8,567	29,213	3,192	.....
Lower Yellowstone	60,246	13,378	4,742	18,120	40,482	1,644
Milk River	(1) 251,113	(6) 81,745	31,620	113,365	126,486	11,262
Sun River	(7) 322,000	107,806	108,609	216,415	79,024	26,561
Totals	665,764	223,575	153,538	377,113	249,184	39,467

United States Reclamation Service Indian Projects.

PROJECTS.	Est. total irrigable area	Indian Reservation Lands			Deeded Lands (acres)	State Lands (acres)
		Allotted	Unallotted	Totals		
Blackfeet	122,500	70,700	(4) 51,800	122,500	.....	.....
Flathead	152,000	(3) 115,000	(5) 32,000	147,000	.....	5,000
Fort Peck	152,000	(2) 80,880	(2) 71,120	152,000	.....	.....
Totals	426,500	266,580	154,920	421,500	.....	5,000
GRAND TOTALS	1,092,264	490,155	308,458	798,613	249,184	44,467

(1) Irrigable acreage 219,557; estimate of 2-8-12.
(2) Estimated.
(3) Includes 40,000 acres entered subject to acts of Congress approved April 23, 1904, and May 29, 1908.
(4) Includes 11,000 acres outside Reservation, mostly entered subject to Reclamation Act.
(5) Open to entry subject to Acts of Congress approved April 23, 1904, and May 29, 1908.
(6) Includes 30,000 acres in Fort Belknap Indian Reservation, of which 5,000 acres have decreed water rights.
(7) Exclusive of lands under Muddy Creek Canal.

A brief statement concerning each of the government reclamation projects in Montana, together with an abstract of essential facts in connection therewith follows:

Huntley Project.

The irrigation plan of the Huntley Project provides for the diversion of water from the south side of the Yellowstone River about two miles above Huntley, Mont., into a main canal which extends down the valley about 27 miles to a point two miles east of Bull Mountain. The greater portion of the water is distributed by gravity. Fourteen miles below the headgates a pumping plant is installed, and a small portion of the water is lifted 44 feet into a high-line canal which will feed the proposed High-Line Equalizing Reservoir. The high-line and reservoir line canals serve about 5,160 acres of land above the main canal in the vicinity of Ballatine, Anita and Pompeys Pillar.

The high-line canal reservoir, with a storage capacity of 853 acre-feet, is projected to be located in the vicinity of Anita, Mont., when constructed. The water stored in the equalizing reservoir will insure at all times a reserve supply to the reservoir line canal, which at present is fed direct from the high-line canal by a 34-foot drop.

Construction During 1912, Up to June 30.

Extension of Canals. At the end of the fiscal year 1912 the construction of the extension of the project was completed, with the exception of a few minor structures, which will require only a few weeks for completion. The main canal was extended eight and one-half miles to a point about two miles east of Bull Mountain, on the Northern Pacific Railway. This extension covers approximately 1,800 acres along the south bank of the Yellowstone River, all of which will be irrigated by gravity. The high-line canal, which was extended for a distance of 5.8 miles, and the nine-mile reservoir line canal, together cover about 1,800 acres in the lower part of Fly Creek Valley and on the bench immediately above the main canal adjacent to Pompeys Pillar.

Settlement and Irrigation.

The population of the project at the present time is approximately 2,000. The towns of Huntley, Ballantine and Pompeys Pillar are growing gradually, and Worden is making rapid progress. During the fiscal year 66 new farm units were entered, having an area of 2,673 irrigable acres, and on June 30, 530 farm units, aggregating 23,321 irrigable acres, had been entered subject to the reclamation act, and water-right applications had been received covering 384 irrigable acres in private ownership.

The principal crops raised during the season of 1911 were alfalfa, grain and sugarbeets, alfalfa averaging 3.7 tons per acre, with a maximum yield of nine tons per acre. The sugarbeet crop was one of the most profitable, with an average return of $62.44 per acre, the maximum yield being 24 tons per acre. The total estimated valuation for the year, including crop returns, stock sold, and stock on hand, was $573,600. The present indications are that the crop of 1912 will exceed in value that of 1911 by at least 25%.

The crop returns for the past two years are shown in the following statement:

CROPS	Acreage		Value		Average value per acre	
	1910	1911	1910	1911	1910	1911
Alfalfa	1,468	2,678	$40,000.00	$ 56,644.00	$27.25	$21.15
Hay and forage	.....	1,354	.....	9,196.00	.....	6.79
Grain	3,629	3,747	43,000.00	55,081.00	11.85	14.70
Sugar Beets	1,400	3,062	87,416.00	183,168.00	62.44	59.82
Vegetables	286	261	17,160.00	12,668.00	60.00	48.53

The government recommends relatively small farm units, because even industrious and worthy men, unless fortified with capital and experience, are usually unable to develop the larger units and return the cost of the works in ten annual installments. The department now permits entrymen, who need or desire to do so, to subdivide their entries, retaining one or more legal subdivisions and accumulating on the retained portion all the building charges previously made on the entire area of the original entry. The average settler breaks, cultivates and irrigates about 15 acres the first year and adds about ten acres each successive year, usually sowing grain, preliminary to seeding to alfalfa. Many of the settlers, however, have secured surprising yields of sugar beets the first year on raw lands.

The total agricultural products grown in 1911 on Huntley Project irrigated lands, together with the livestock produced amounted to an average value of over $32 per acre for every acre of irrigated land, and there also was a material increase in the value of the farm lands. With diversified crops and intensive methods of farming it is possible to realize net returns ranging from $500 to $2,000 a year on a 40-acre tract. The Billings Gazette of August 13, 1912, contained the following news item:

"The Huntley Project received a real boost in the record made by M. W. Kesler, who lives on one of the 40-acre tracts on the project, one-quarter mile north of the Wheatley school, just east of the town of Huntley. He has divided his 40 acres into small tracts on which he has planted a variety of crops, all of which did unusually well. Mr. Kesler did all the work on his ranch himself with the help of his 11 children, all but two of which are of school age and attended the Wheatley school, so that his labor did not cost him anything, and last fall, after he had disposed of all his crops, Mr. Kesler put $2,385 in the Huntley bank, being the net earnings from his 40-acre tract. A total of 17 acres were planted to sugar beets, for which the Billings Sugar Company paid Mr. Kesler $1,550. Mr. Kesler raised a large number of turkeys from which he received $75, and six hogs and two cows, together with a large number of chickens. The receipts from the small garden near the house, and from the two cows, six hogs and chickens, paid all of the farmer's expense for the year."

There are eight townsites on the project, all of them being stations on either the transcontinental lines of the Chicago, Burlington & Quincy or Northern Pacific Railways, Huntley and Osborn being common to both. There are five daily trains each way, and the average distance of the average farm from a railway station is one and five-eighths miles. The domes-

Huntley Project—Onions for Seed on N. N. Wheatley Homestead.

tic water supply is obtained from wells at depths of from 15 to 50 feet. Cost of completing a well from one to two dollars per foot.

There are now 14 school houses within the project district (bonds have recently been voted for the construction of four central high schools) and eight church organizations have been established. A number of church buildings have been erected, one costing $4.000. Good public roads extend to all parts of the project lands, and many of the farms are connected by a telephone system which will soon include the homesteads of half of the project. A rural delivery system is in operation throughout the project, and several banks have been established.

Here is a typical example, among others on the various projects of the Reclamation Service, of the scientific building up of a thriving agricultural community in four years (date of first cultivation season 1908).

Location.

County: Yellowstone.

Township: 2 and 3 N., Rs. 27 to 31 E., Montana meridian.

Railroads: Northern Pacific; Chicago, Burlington & Quincy.

Railroad Stations: Huntley, Osborn, Worden, Newton, Pompeys Pillar, Bull Mountain, Ballatine and Anita, Mont.

Data for Complete Project (Estimated for uncompleted features).

Source of water supply: Yellowstone River.

Reservoir (proposed): High Line Equalizing Reservoir; capacity, 853 acre-feet.

Dam (proposed): High Line Reservoir; contents, 151,000 cubic yards of earth.

Length of canals constructed: 10 miles with capacities greater than 300 second-feet; 19 miles with capacities from 50 to 300 second-feet; 273 miles with capacities less than 50 second-feet.

Tunnels completed: Three; aggregate length, 2,654 feet.

Water power: Estimated total, 600 horsepower; 286 net horsepower developed.

Irrigable area: Entire project, 32,405 acres.

Present status of irrigable land: Entered subject to the reclamation act, 23,321 acres; open to entry, 2,292 acres; in private ownership, 3,192 acres; 3,600 acres withdrawn from entry.

Agricultural and Climatic Conditions.

Area for which the service is prepared to supply water, season 1912: 28,805 acres.

Area under water right applications, season of 1912: 23,744 acres.

Average elevation of irrigable area: 3,000 feet above sea level.

Average annual rainfall on irrigable area: For six years, 12.19 inches; and for the calendar year 1911 it was 14.32 inches.

Range of temperature on irrigable area: —35 degrees to 100 degrees.

Character of soil of irrigable area: Ranges from heavy clay to light sandy loam.

Principal products: Alfalfa, oats, barley, potatoes and sugar beets.

Principal markets: Billings, Mont.; St. Paul and Minneapolis, Minn.; Denver, Colo.; Kansas City, Mo.

Lands Opened for Irrigation.

Building charge per acre of irrigable land: $30. Additional charge of $4 per acre to Indians. Annual operation and maintenance charge, $0.60 per acre of irrigable land for season of 1911; $1.00 per acre of irrigable lands for season of 1912. Dates of public notices: May 21, 1907; March 3, 1909; March 13, 1912.

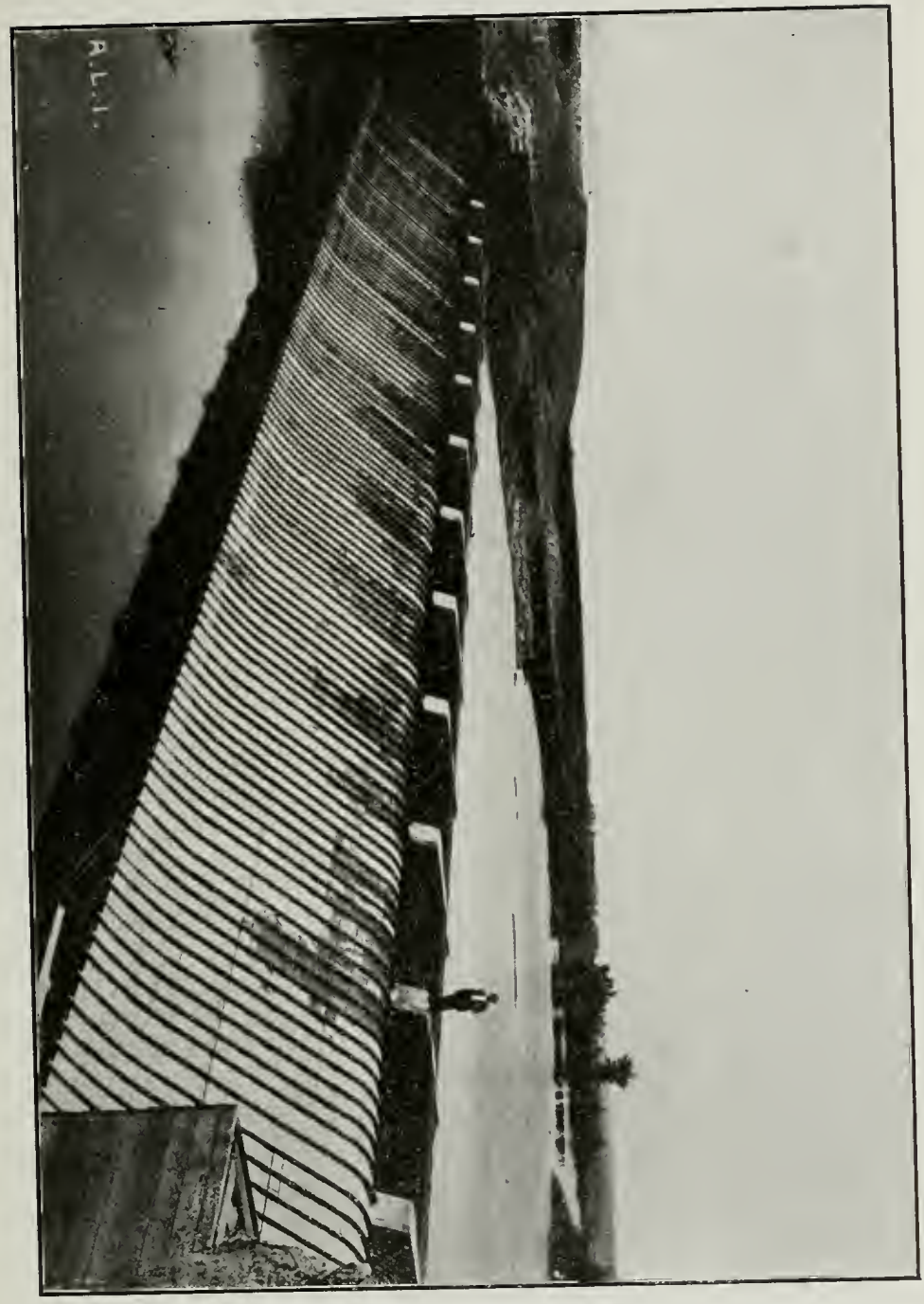
Chronological Summary.

Reconnaissance made and preliminary surveys begun in 1904.
Construction authorized by Secretary, April 18, 1905.
First irrigation by Reclamation Service, season 1908.
Main unit completed in 1908.
Entire project 96 per cent completed June 30, 1912.

Milk River Project.

On the eastern side of the Glacier National Park a few miles south of the Canadian boundary are the upper and lower St. Mary Lakes, fed principally by melting snows and great permanent glaciers among the high mountain valleys and gorges. The St. Mary River flows northward from the lower lake into Hudson Bay. A few miles eastward from this river in the northwest corner of the Blackfeet Indian Reservation are the sources of the Milk River. Two principal forks flow northeastwards into Canada where the Milk River runs a tortuous course eastwards for a distance of more than 100 miles measured on the boundary (but much more than this by the river course), thence crossing back into the United States and flowing southeastwards and eastwards joins the Missouri about 360 miles, as the crow flies, from the head of the lakes. After a prolonged investigation and a period of negotiations, covering ten years, a treaty was made with the British government allowing the United States to divert a portion of the flow of the St. Mary River by a canal leading into the Milk River, the water so diverted to be allowed to flow through the entire course of the Milk River in Canada so as to be available for the irrigation of a district extending more than 150 miles along its course in northern Montana. The location of the dam, which will merge the two St. Mary lakes into one reservoir with a capacity of 218,000 acre feet and a length of 17 miles, has been determined after exhaustive investigations, including digging many test pits and putting down a great number of drill holes, some of them to a depth of 175 feet, and making experiments on percolation through the soil. This dam will have a maximum height of 46 feet and length of half a mile. Into this reservoir it is proposed to divert Swift Current Creek, which at present joins the St. Mary River some distance below the projected dam. At the outlet of the lower of the two McDermott Lakes from where the water drops 75 feet it is proposed to build a concrete dam about 25 feet high for storage; also to convert the Sherburn Lakes into a storage reservoir.

The irrigation plan of the project provides for the storage of water in St. Mary Lakes and its diversion through a canal 28.8 miles long, heading



Dodson Dam. 380 Feet Long. Jan. 29, 1910. Milk River Project.

one mile below the reservoir and discharging into the North Fork of Milk River, thence flowing through Canada for 100 miles or more and returning to the United States; the storage of water in Nelson Reservoir, south of Milk River and 14 miles northeast of Malta; the discharge of stored water into Milk River as required; the diversion of water from Milk River by dams near Chinook into four canals, two on each side of the river, for the irrigation of lands near Chinook and Harlem, comprising the Chinook division; the diversion of water from Milk River by a dam near Dodson into two canals, the north side canal irrigating lands near Dodson, Wagner and Malta, and the south side canal conveying water to Nelson Reservoir and irrigating lands near Wagner, Malta, Bowdoin and Ashfield; the irrigation of lands on both sides of Milk River in the vicinity of Saco and Hinsdale from the stored waters of Nelson Reservoir, comprising the Malta division; and in the Glasgow division the diversion of water at Vandalia Dam into a canal on the south side of Milk River for the irrigation of lands near Tampico, Glasgow and Nashua. In case the normal flow of Milk River at Vandalia Dam is not sufficient for the irrigation of lands in the Glasgow division, the stored waters in Nelson Reservoir will be returned to Milk River and diverted again at Vandalia Dam.

The features of the above irrigation plan which have been completed are: The Dodson Diversion Dam to the height of fixed crest; Dodson Canal South headworks; eight miles of the Dodson South Canal, which will ultimately be 44 miles in length; Point of Rocks Equalizing Reservoir; and foot hill and river laterals, supplying water to about 7,800 acres of land above Malta. The principal features remaining to be constructed are the St. Mary storage works and diversion canal, Nelson Reservoir, Chinook Diversion Dam, Vandalia Dam, canals and structures in the Chinook, Malta and Glasgow divisions.

Construction in 1912, Up to June 30.

On May 1, 1912, the secretary of the interior signed the vested water right contract for the adjustment of private water rights and a board of engineers was immediately convened and recommendations made covering the features to be constructed with the allotted funds. Contracts were awarded for the construction of canals and structures on the first half of Dodson North Unit and at the close of the fiscal year the contractors were on the ground assembling the necessary force and equipment. Drawings and specifications have been completed covering the enlargement and extension of 34 miles of Dodson South Canal from Point of Rocks to Nelson Reservoir, and work is in progress on those covering the extension of Dodson North Canal from a point about two miles west of Wagner to the irrigable lands of the second unit opposite Malta; the Vandalia South Canal for a distance of about 40 miles from the diversion point to Nashua; and the lateral systems and waste water ditches under these canals.

Settlement and Irrigation.

No public notice has been issued announcing the opening of the project.

Water is being delivered to patented and homesteaded lands on a rental basis.

When the land is subdued, alfalfa will be one of the staple crops, as it is now being grown successfully under private canal systems and pumping plants. Most of the soil throughout the valley is a sandy loam, well adapted to sugar beets, potatoes, and other crops requiring cultivation, and where gumbo is encountered, excellent stands of small grains and alfalfa can be raised.

Location.

Counties: Teton, Hill, Blaine and Valley.

Townships: 34 to 37 N., R. 14 W.; 34 N., R. 15 W.; 37 N., Rs. 11 to 13 W.; 27 to 33 N., Rs. 17 to 42 E., Montana meridian.

Railroads: Great Northern and Canadian Pacific.

Railroad stations and population, 1910: Browning, Havre, 3,624; Chinook, 780; Harlem, 383; Dodson; Malta, 433; Saco, 200; Hinsdale, 173; Glasgow, 1,158; and Nashua, 50; Cardston and Woolford, Canada.

Water Supply.

Source of water supply: St. Mary Lakes, Swift Current Creek and Milk River.

Area of drainage basin: St. Mary Lakes and Swift Current Creek, 292 square miles; Milk River at Havre, 5,050 square miles; Milk River at Malta, 10,700 square miles; Milk River at Hinsdale, 17,300 square miles.

Annual run-off in acre-feet of Milk River: At Havre (5,050 square miles), 1898 to 1911—Maximum, 424,000; minimum, 17,400; mean, 216,000. At Malta (10,700 square miles), 1903 to 1911—Maximum, 675,000; minimum, 29,400; mean, 296,000. At Hinsdale (17,300 square miles), 1909 to 1911—Maximum, 599,000; minimum, 228,000; mean, 436,000. Of St. Mary River: At Babb (177 square miles), 1902 to 1911—Maximum, 535,000; minimum, 305,000; mean, 422,000. At international line (452 square miles), 1903 to 1911—Maximum, 1,220,000; minimum, 511,000; mean, 764,000.

Data for Complete Project.

Reservoirs: St. Mary Lakes—Area, 6,910 acres; capacity, 124,000 acre-feet (by dredging between lakes); length of spillway, 500 feet; elevation of spillway, 20 feet above water surface of the natural lake. McDermott Lakes—Height of dam not determined; probable area, 540 acres; capacity, 10,000 acre-feet; length of spillway, probably 100 feet; elevation of spillway, 25 feet above the water surface of the natural lake. Sherburne Lakes—Height of dam, not determined; capacity about 30,000 acre-feet. Red Eagle Lakes—Height of dam, area, etc., not determined; capacity, probably about 5,000 acre-feet. Nelson Reservoir—Area, 6,380 acres; capacity, 141,815 acre-feet; no spillway.

Storage dams: St. Mary Lakes—Type, earth fill; maximum height, 32 feet; length of crest, 2,700 feet; volume, 135,000 cubic yards. McDermott Lakes—Type, rubble masonry (probably); maximum height, 30 feet; length of crest, 650 feet; volume not determined. Sherburne Lakes—Type, earth fill; height not determined. Red Eagle Lake—Type, rubble masonry

(probably); height not determined. Nelson Reservoir—Type, earth fill; maximum height, 33 feet; length of crest, 15,135 feet; volume, 911,540 cubic yards

Diversion dams: Swift Current Creek—Type, earth fill backed by rock-filled timber crib; length, 2,800 feet; maximum height, 13 feet. Chinook—Type and length not determined. Dodson—Rock-filled timber crib, with automatic crest; maximum height, 26 feet; length, 318 feet 7 inches. Vandalia—Type, re-enforced concrete; height, 27 feet; length, 248 feet.

Length of canals: St. Mary Canal—Length, 28.8 miles; capacity, 850 second-feet. Chinook division not determined. Dodson division—44 miles with capacities greater than 800 second-feet; 110 miles with capacities from 50 to 300 second-feet; 190 miles with capacities less than 50 second-feet; Glasgow division—40 miles with capacities from 50 to 300 second-feet; 60 miles with capacities less than 50 second-feet.

Pressure pipes: There will be a double-barrel 7½ foot steel pipe across the St. Mary River of total length 3,300 feet, operating under a pressure head of 160 feet; a double-barrel 6½ foot steel pipe across Halls Coulee, of total length 1,500 feet, operating under a pressure head of 95 feet; and a 10-foot concrete pipe of total length 200 feet, operating under a pressure head of 10 feet.

Water power: For construction purposes, power plant of 800 kilowatts capacity.

Aggregate length of dikes: Dodson division (constructed), 22,700 feet.

Irrigable area: Entire project, 219,557 acres (Dodson division, first unit works completed for 7,800 acres).

Present status of irrigable land: 43,700 acres entered subject to reclamation act; 28,300 acres public lands unentered; 8,700 acres State lands; 108,857 acres in private ownership; 30,000 acres Indian lands.

Agricultural and Climatic Conditions.

Area for which the Service is prepared to supply water, season 1912, 7,800 acres.

Average elevation of irrigable area, 2,200 feet above sea level.

Average elevation of St. Mary storage, 4,500 feet above sea level.

Average annual rainfall on irrigable area: For 29 years at Havre, 13.63 inches; for 6 years at Malta, 13.33 inches; 1911 at Malta, 18.30 inches.

Average annual rainfall on St. Mary Storage: About 24 inches (Teton County), including the snow equivalent.

Range of temperature on irrigable area: —50 degrees to 103 degrees F.

Character of soil of irrigable area: Sandy loam and gumbo.

Principal products: Alfalfa, hay, grain, and vegetables.

Principal markets: Minneapolis and St. Paul, Minn.; local.

Chronological Summary.

Reconnaissance and preliminary surveys begun by the Reclamation Service in 1902.

Construction authorized by Secretary, March 14, 1903.

Construction of St. Mary Storage unit authorized by Secretary, March 25, 1905.

Construction begun July 27, 1906.

Dodson Diversion Dam completed in January, 1910.

Treaty with Great Britain relating to distribution between Canada and the United States of the waters of St. Mary and Milk Rivers signed January 11, 1909, and proclaimed May 13, 1910.

Vested water right contract executed May 1, 1912.

Recommendation covering construction of the project approved by Secretary June 12, 1912.

First unit under Dodson South Canal 85 per cent completed June 30, 1912.

Entire project 12 per cent completed June 30, 1912.

Sun River Project.

The Sun River Project is one of the largest as well as one of the most difficult works yet undertaken by the Reclamation Service. A total of 322,000 acres situated in four counties and extending 75 miles from the base of the Rockies to Great Falls and beyond on the Missouri River may ultimately be irrigated, provided the available water supply is found to be sufficient.

Semi-arid and heretofore utilized only for grazing without water, with it, this vast tract will be worth upwards of $100 an acre, as it will be intensively cultivated. Eventually the lands lying near Great Falls will probably be divided into tracts of two or three acres each, and, with the building of interurban railroads, will become the homes of the Boston & Montana smelter and other city employes. Lands farther distant will be divided into 40 and 80 acre units, but the ultimate average will probably not exceed 40 acres to each farmstead.

The total estimated cost is upwards of $13,000,000. The Great Northern's Great Falls-Shelby line traverses the eastern side of the project, and the stations of Manchester, Vaughn, Power and Dutton are within its boundaries. Three transcontinental Railway Companies are now making surveys of additional lines to or across the project, and it is certain that within the next few years transportation facilities will be unexcelled.

The irrigation plan provides for the storage of water in Sun River Storage Reservoir on the North Fork of Sun River; in the Willow Creek Reservoir on Willow Creek; in Pishkun Reservoir north of Sun River; in the Muddy Creek and in Benton Lake Reservoir, 8 miles north of Great Falls, Mont.; the diversion of water from Bowl and Basin Creeks, tributaries of Flathead River, across the Continental Divide to Sun River drainage; the diversion of water from the North Fork of Sun River through supply canals for the Willow Creek and Pishkun Reservoirs; the diversion of flood waters from Deep Creek into Benton Lake Reservoir; the diversion of water from Sun River, supplemented by stored waters released from Sun River Storage and Willow Creek Reservoirs, into a canal system watering lands mainly in the abandoned Fort Shaw Military Reservation; the diversion of water from the Pishkun Reservoir into Sun River Slope Canal, supplying water for lands in the Sun River Valley; the diversion of water from Deep Creek, supplemented by stored water released from Benton Lake

Reservoir into a canal system supplying water to the lands in the Sun River and Teton River Valleys.

The Fort Shaw unit and the Willow Creek Dam (first development) of the project are completed. Final location surveys have been made for the Main Canal supplying Pishkun Reservoir and for the main canal supplying a part of Sun River Slope. Preliminary location surveys have been made for the main canals of the remainder of the project. Diamond drill borings have been made at the site of the proposed Sun River Diversion and are now in progress at the site of the Sun River Storage Dam. Topographic surveys have been made of the irrigable lands on the proposed Teton River Slope; of a portion of the lands on the Sun River Slope; for Sun River Storage, Pishkun, Willow Creek, Muddy Creek, and Benton Lake Reservoirs, and are now being made for the remainder of the irrigable land on the project.

The Fort Shaw unit of this project was completed in December, 1909. It consists of a solid body of irrigable land located on the South side of Sun River, containing 17,000 acres, and is traversed by the Sun River branch of the Great Northern Railway. This tract is 25 miles west of Great Falls, and 200 miles in air line northwest of the Huntley Project; the opportunities, characteristics and results are similar to those of the Huntley Project.

On the Fort Shaw unit during the season of 1911 the entire canal system, including 121 miles of canals and laterals, was in operation, irrigating 171 farm units, aggregating 6,892 acres. Two thousand five hundred acre-feet of water in Willow Creek Reservoir was available, but was not used, as the supply from the river was sufficient. The irrigating season began April 29 and closed September 30. Approximately 24,192 acre-feet of water was diverted, of which 11,380 acre-feet was delivered to the land.

Settlement and Irrigation.

During the past year settlement has progressed on the Fort Shaw unit, the population on the farms increasing from about 750 in 1911 to over 1,000 in 1912. During the spring of 1912 some of the settlers relinquished a portion of their irrigable area, stating that they had more than they could handle. On June 30, 1912, there were 40 farm units still open to entry. On June 30, 1912, 48 of the 60 lots in Simms townsite which had been placed in the market had been sold and 12 of the 33 in Fort Shaw townsite.

Location.

Counties: Teton, Lewis and Clark, Chouteau, Cascade.

Townships: 20 to 25 N., Rs. 3 E. to 8 W., Montana Meridian.

Railroad: Great Northern.

Railroad Stations: Vaughn, Power, Dutton, Collins, Largent, Fort Shaw, Simms, Riebling and Gilman, Mont.

Water Supply.

Source of water supply: Sun River and tributaries, Deep Creek, Bowl Creek and Basin Creek.

Area of drainage basins: Sun River, 1,070 square miles; Deep Creek,

260 square miles; Bowl Creek, 9 square miles; Basin Creek, 15 square miles.

Annual run-off in acre-feet, 1905-1911: North Fork of Sun River near Augusta—Maximum, 805,000; minimum, 378,000; mean, 638,000. Willow Creek, near Augusta, 1905-1911—Maximum, 35,300; minimum, 7,900; mean, 18,800. Sun River, at Sun River, 1906-1911—Maximum, 1,140,000; minimum, 380,000; mean, 816,000. South Fork of Sun River, near Augusta—Maximum, 139,000; minimum, 20,800; mean, 72,600.

Data for Complete Project.

(Estimated for uncompleted features.)

Reservoirs: Willow Creek—Area, 2,696 acres; capacity, 86,000 acre-feet; length of spillway, 200 feet; elevation of spillway, 100 feet above stream bed. Sun River Storage—Area, 3,540 acres; capacity, 269,000 acre-feet; length of spillway, 580 feet; elevation of spillway above stream bed, 321 feet. Pishkun—Area, 1,542 acres; capacity, 45,700 acre-feet. Muddy Creek—Area, 1,828 acres; capacity, 33,000 acre-feet. Benton Lake—Area, 9,300 acres; capacity, 144,000 acre-feet.

Storage dams: Willow Creek—Type, earth fill; maximum height, 110 feet; length of crest, 1,045 feet; volume, 452,000 cubic yards. Sun River Storage—Type, masonry; maximum height, 329 feet; length of crest, 989 feet; volume, 296,500 cubic yards. Pishkun—Type, earth fill; maximum height, 48 feet; length of crest, 3,500 feet; volume, 440,000 cubic yards. Benton Lake—Type, earth fill; maximum height, 35 feet; length of crest, 120 feet; volume, 12,000 cubic yards.

Diversion dams: Sun River—Type, concrete masonry; maximum height, 140 feet; length of crest 190 feet; volume, 3,300 cubic yards. Deep Creek—Type, re-enforced concrete weir; maximum height, 12 feet; length of crest, 100 feet; volume, 500 cubic yards.

Length of canals: Fort Shaw unit—18 miles with capacities of from 50 to 300 second-feet; 103 miles with capacities less than 50 second-feet. Remainder of project—128 miles surveyed with capacities greater than 300 second-feet; smaller canals not located.

Tunnels: Number, 5; aggregate length, 5,224 feet.

Dikes: Number, 5; aggregate length, 22,000 feet.

Irrigable area: Entire project about 216,346 acres; Fort Shaw unit, 16,346 acres.

Present status of irrigable lands (entire project): 83,263 acres entered subject to the reclamation act; 2,585 acres open to entry; 73,803 acres withdrawn from entry; 15,165 acres of State land; 41,530 acres in private ownership.

Agricultural and Climatic Conditions.

Area for which the Service is prepared to supply water, season of 1912: 16,346 acres.

Area under water right applications, season of 1912: 10,913 acres.

Average elevation of irrigable area: 3,700 feet above sea level.

Average annual rainfall on irrigable area for 24 years: 12 inches; 1911, 12.09 inches.

Range of temperature on irrigable area: —40 degrees to 100 degrees.

Character of soil of irrigable area: Sandy loam, clay, adobe, and alluvium.

Principal products: Hay, grain and vegetables.

Principal markets: Great Falls, Helena and Butte, Mont.

Lands Opened for Irrigation.

Dates of public notices: March 26, 1908; November 19, 1910; March 28, 1911; March 2, 1912.

Location of lands opened: Tps. 20 and 21 N., Rs. 1 to 3 W., Montana meridian.

Present status of irrigable lands opened: 10,667 acres entered, subject to the reclamation act; 2,585 acres open to entry; 281 acres of State lands; 2,096 acres in private ownership.

Building charge per acre of irrigable land: $30 and $36.

Annual operation and maintenance charge: $1 per acre of irrigable land.

Chronological Summary.

Reconnaissance made and preliminary surveys begun in 1905.

Construction authorized by Secretary February 26, 1906.

Fort Shaw Main Canal completed July, 1908.

First irrigation by Reclamation Service, season of 1909.

Fort Shaw unit completed December, 1909.

Willow Creek Dam completed November 7, 1911.

Whole project 9 per cent completed June 30, 1912.

Lower Yellowstone Project.

The irrigation plan of the Lower Yellowstone project provides for the diversion of water from the Yellowstone River at a point 18 miles below Glendive, Mont., into a canal on the west side of the river, which extends down the valley a distance of 67 miles to the confluence of the Yellowstone and Missouri Rivers, conveying water for the irrigation of land lying between it and the Yellowstone River. The fall of the water which will be discharged from the main canal into lateral KK at a point 19 miles below the headgates will be utilized to operate turbines direct-connected to centrifugal pumps for raising water to irrigate approximately 3,000 acres of excellent bench land. The completed features are the Lower Yellowstone Dam and diversion works; the main canal for a distance of 61 miles and the complete lateral system in connection therewith. Sublaterals and extensions of a few main laterals will be constructed as the needs of water users require. The features for future completion are the pumping plant, the remaining 6 miles of the main canal, and about 61 miles of laterals which, when completed, will irrigate approximately 20,000 acres.

Operation and Maintenance.

During the season of 1911, from May 18 to October 10, the diverting works, 61 miles of main canal, and 127 miles of laterals were operated, and 230 farm units, aggregating 21,817 acres, were irrigated; 21,799 acre-feet were delivered to irrigators.

Settlement and Irrigation.

There is very little irrigable land on the Lower Yellowstone Project

Lower Yellowstone Dam. 700 Ft. Long, 12 Ft. High, 22,000 cubic Ft. of water passing over at this time, July 6, 1910. Lower Yellowstone Project.

open to entry, although there is a considerable area in private ownership, consisting chiefly of excess holdings, that must be disposed of under the terms of the reclamation act. During the past year twelve homesteads, covering 680 irrigable acres and 30 tracts of land in private ownership covering 2,998 irrigable acres have been taken up.

The completion of the Missouri River Railway from Glendive to Sidney, Montana, has had a stimulating effect on business in general throughout the entire valley. There are now on its line from Glendive the six stations of Stipek, Intake, Burns, Savage, Crane and Sidney, all of which towns, together with Fairview and Mondak, show a marked increase in population and prosperity, with modern improvements and business facilities.

The Great Northern Railway Company has recently completed surveys for its new line from New Rockford to Lewistown, which will cross the Lower Yellowstone Project near Fairview, with a bridge across the Yellowstone River at this point. From Fairview the same Company is constructing a line to a junction with its main east and west line at Snowden.

Of the seeded irrigable area for 1912 it is estimated that 35 per cent is in oats; 35 per cent in wheat; 15 per cent in barley; 10 per cent in alfalfa; 4 per cent in flax; and 1 per cent in various other crops.

The average return per acre in 1911 was $14.35. The average return for the season of 1912 will be much greater.

Location.

Counties: Dawson, Mont.; McKenzie, N. Dak.

Townships: 18 to 26 N., Rs. 56 to 60 E., Montana Meridian; 150 to 152 N., R. 104 W., fifth principal meridian.

Railroads: Northern Pacific, Great Northern and Missouri River Railway.

Railroad stations and population, 1910: Glendive, 2,428; Stipek, Intake, Burns, Savage, Crane, Sidney, 345; Mondak, Mont.

Water Supply.

Source of water supply: Yellowstone River.

Area of drainage basin: 66,000 square miles.

Annual run-off in acre-feet: Yellowstone River at Glendive, Mont., 1903-1911—Maximum, 13,300,000; minimum, 8,500,000; mean, 10,700,000.

Data for Complete Project.

Diversion dam: Type, rock-filled timber weir; maximum height, 12 feet; length of crest, 700 feet; length of rock fill, 700 feet; volume, 12,807 cubic yards.

Length of canals: 49 miles with capacity greater than 300 second-feet; 19 miles with capacity from 50 to 300 second-feet; 129 miles with capacity less than 50 second-feet.

Dikes: Aggregate length, 35,600 feet.

Water power: Estimated 290 horsepower, none developed.

Irrigable area: Entire project, 60,116 acres; first unit, 40,658 acres; extensions, 19,458 acres.

Present status of irrigable land: Entered subject to reclamation act,

14,058.13 acres; open to entry, 3,931.30 acres; State lands, 1,644 acres; private lands, 40,482.09 acres.

Agricultural and Climatic Conditions.

Area for which the Service is prepared to deliver water, season of 1912: 37,609 acres.

Area under water-right applications, season of 1912: 29,542 acres.

Average elevation irrigable area: 1,900 feet.

Average annual rainfall on irrigable area: 16 inches.

Range of temperature on irrigable area: —46 degrees to 110 degrees F.

Character of soil of irrigable area: Chiefly deep sandy loam.

Principal products: Grain, forage crops, and vegetables.

Principal markets: Minneapolis, St. Paul, and Duluth, Minn.; local markets consume forage crops and vegetables.

Lands Opened for Irrigation.

Dates of public notices and orders: December 21, 1908; April 24, 1909; March 7, March 24, May 1, August 28 and November 8, 1911; March 1 and April 30, 1912.

Location of lands opened: Tps. 18 and 19 N., R. 57 E.; Tps. 19 and 20 N., R. 58 E.; Tps. 21, 22, 23, 24 and 25 N., R. 59 E., and Tp. 24 N., R. 60 E., Montana principal meridian. Tps. 150, 151 N., R. 104 W., fifth principal meridian.

Present status of irrigable area opened: 7,204.61 acres entered subject to the reclamation act; 779 acres open to entry; 1,504 acres State land; 31,170.48 acres private land.

Building charge per acre of irrigable land: $42.50 and $45. Annual operation and maintenance charge: $1 per acre per annum for $42.50 water right applicants and $2.50 per acre for 1912 for $45 water right applicants.

Chronological Summary.

Reconnaissance made and preliminary surveys begun in 1903.

Construction authorized by Secretary May 10, 1904.

Main canal: 61 miles completed March, 1909.

Lower Yellowstone Dam completed February, 1910.

First irrigation by Reclamation Service, season 1909.

Entire project 95 per cent completed June 30, 1912.

Projects in Indian Reservations.

There are three irrigation projects well begun in the Indian Reservations of Montana. The Office of Indian Affairs is in charge of appropriations and the Reclamation Service of engineering, designs and construction. The Fort Peck Project, planned for 152,000 acres, extending 100 miles along the north bank of Missouri River and tributaries, immediately east of the Milk River Project, is yet only in the very early stage of development. Indian allotments have been made for about 90,000 acres of irrigable land; works are now completed covering 7,500 acres of allotted land.

To gain access to the work on the St. Mary diversion canal which is near the Canadian line, the Reclamation Service has been authorized to build 80 miles of road through the Blackfeet Indian Reservation, which is

chiefly an open country of rolling plains, creek bottoms and coulees, grass covered—a fine grazing land, much of which is a wilderness of waiting opportunity for inhabitants and stock. The United States is employing Indians on this work as far as possible. In addition to the large number of Indians employed as laborers, there were 160 four-horse teams owned and driven by Indians employed on Reclamation work on the Blackfeet Reservation at one time this season.

Blackfeet Project.

The Blackfeet Project begins with Lower Two Medicine Lake located partly in the southeastern corner of the Glacier National Park. A storage dam now under construction will convert this lake into a reservoir of about 854 acres in area and capacity of 16,000 acre-feet. Two other storage reservoirs with combined capacity of nearly 90,000 acre-feet are contemplated. The possible development is 122,500 acres, of which 17,000 are now developed, served by 34 miles of main canal, 75 miles of laterals and sublaterals. Fifty Indian laborers and as many Indian teams are working at Two Medicine Dam.

The irrigation plan of the Blackfeet Project provides for five irrigation systems on the Blackfeet Indian Reservation, as follows: (1) The Carlow Canal system, heading on the right bank of Cut Bank Creek and supplying water for 18,000 acres of land near Carlow and Seville; (2) the Cut Bank Canal System, heading on the left bank of Cut Bank Creek and supplying water for 20,000 acres of land north and east of the creek, 11,000 acres being outside the reservation; (3) the Two Medicine Canal System, diverting from the left bank of Two Medicine River and supplying water through the north branch canal, the Spring Lake Reservoir, and south branch canal to 48,000 acres of land; (4) the Badger Canal system, diverting water from the right bank of Badger Creek and supplying water direct through a feeder canal to 3,000 acres of land on Piegan Flats and through Four Horns Supply Canal and Reservoir to 33,000 acres of land between Badger and Birch Creeks; and (5) the Birch Creek Canal system, diverting from Birch Creek and supplying water to 3,500 acres of land between Birch and Blacktail Creeks. The irrigable lands of the project are located in general in the southeastern portion of the Blackfeet Indian Reservation, between Cut Bank and Birch Creeks.

Construction—to June 30, 1912.

The first development of the Two Medicine Canal system has been completed, including 36 miles of main canal with headworks and other structures, and a distributing system to deliver water to approximately 24,000 acres of land. On the Badger system 12 miles of the Four Horns Supply Canal and a small distributing system of Piegan Flats have been completed. Construction is in progress on Four Horns Supply Canal headworks, structures for the Piegan Flats distributing system, and upon Two Medicine Lake Dam. The Carlow, Cut Bank, and Birch Creek units remain to be constructed on completion of the Two Medicine and Badger units.

Location.

County: Teton.

Townships: 31 to 34 N., Rs. 5 to 10 W.; 29 N., R. 8 W.; Rs. 6 to 9 W.; and 35 N., Rs. 6 and 7 W., Montana meridian.

Railroad: Great Northern.

Railroad stations: Browning, Blackfoot, Bombay, Seville, Garnet and Cutbank.

Water Supply.

Source of water supply: Cut Bank, Two Medicine, Badger, Birch, Whitetail and Blacktail Creeks. Area of drainage basins: 1,700 square miles.

Data for Complete Project.

Reservoirs: Two Medicine Lake—Area, 854 acres; capacity, 16,000 acre-feet. Spring Lake—Area, 1,400 acres; capacity, 29,000 acre-feet. Four Horns—Area, 1,867 acres; capacity, 60,640 acre-feet.

Storage dams: Two Medicine Lake—Type, earth embankment with rock-filled log crib and re-enforced concrete controlling works; maximum height, 36 feet; length of crest, 900 feet. Spring Lake—Type, earth fill; maximum height, 50 feet; length of crest, 1,500 feet; volume, 75,000 cubic yards. Four Horns—Type, earth fill; maximum height, 62 feet; length of crest, 2,225 feet; volume, 149,000 cubic yards.

Diversion dams: For Badger, Birch and Cut Bank Creeks, not yet designed. Two Medicine—Type, brush and rock; maximum height, 4 feet; length of weir, 165 feet; length of earth fill, 1,000 feet.

Length of canals: 40 miles with capacities greater than 300 second-feet; 144 miles with capacities from 50 to 300 second-feet; 600 miles with capacities less than 50 second-feet.

Dikes: Aggregate length, 800 feet.

Irrigable area: Entire project, 122,500 acres; Two Medicine unit, 48,000 acres; Badger unit, 33,000 acres; Cut Bank and Carlow units, 38,000 acres; Birch unit, 3,500 acres.

Present status of irrigable land: Practically all allotted to Indians.

Agricultural and Climatic Conditions.

Area for which the Service is prepared to supply water, 10,000 acres.

Average elevation of irrigable area: 3,850 feet above sea level.

Average annual rainfall on irrigable area: 16 inches (16.13 in 1911).

Range of temperature on irrigable area: —44 degrees to 100 degrees.

Character of soil of irrigable area: Principally rich, sandy loam; some gravelly loam and gumbo.

Principal products: Hay, grain and vegetables.

Principal markets: Great Northern railroad towns from St. Paul to the Pacific coast.

Chronological Summary.

Reconnaissance and preliminary surveys made in 1907.
Construction work on the Two Medicine unit began July, 1908.
Surveys of Two Medicine Lake Dam begun in fall of 1909.
Construction of Two Medicine Lake Dam begun in July, 1911.

Location surveys of Badger unit begun in April, 1911.
Construction on Badger unit begun in June, 1911.
Two Medicine unit 64.8 per cent completed June 30, 1912.
Badger unit 18.9 per cent completed June 30, 1912.

Flathead (Indian) Project.

The plan of the Flathead project provides for the irrigation of about 152,000 acres of land in various parts of what was the Flathead Indian Reservation, water being diverted from creeks and rivers rising in the Mission Mountains and conducted by canals directly to the land and to reservoirs for the storage of flood water. About 12 reservoirs will be constructed, the water supply being supplemented when necessary by pumping from Flathead Lake. Irrigable tracts which contain the largest percentage of irrigable land allotted to the Indians, have been selected for the first development.

The following principal features have been completed: A distribution system covering approximately 5,000 acres of land north of the Jocko River, taking water from the Jocko River; a distribution system covering 6,000 acres on the south side of Jocko River, using the Finley, Agency and Big Knife Creeks and Jocko River as water supply; Mission Lateral B, covering approximately 5,000 acres of land between Mission and Post Creeks; a distribution system covering 16,000 acres of land lying under the Ninepipe Reservoir; and the Pablo Feeder Canal from Post Creek to the North Pablo Reservoir.

Operation and Maintenance.

Irrigation began in 1910, 7,676 acre-feet of water being delivered to 1,071 acres in the Jocko division, and 2,260 acre-feet to 1,120 acres in the Mission division. In 1911, 4,470 acre-feet of water were delivered to 1,998 acres in the Jocko division; 321 acre-feet to 326 acres in the Mission division, and 46 acre-feet to 46 acres in the Post division. Up to June 30, 1912, water right applications were received covering 8,920 acres.

Location.

Counties: Flathead, Missoula, Sanders.
Townships: 15 to 25 N., Rs. 17 to 25 W., Montana meridian.
Railroad: Northern Pacific.
Railroad stations: Evaro, Arlee, Ravalli, Divon and Perma, Mont.

Water Supply.

Source of water supply: Flathead, Jocko and Little Bitter Root Rivers; Mud, Crow, Post, Mission, Dry, Finley, Agency, Big Knife and Valley Creeks, and about 60 smaller streams.

Area of drainage basins: 8,000 square miles.

Data for Complete Project.

Reservoirs: 16; aggregate area, 117,556 acres; aggregate capacity, 1,944,970 acre-feet.

Length of canals: 14 miles with capacities greater than 300 second-feet; 82 miles with capacities from 50 to 300 second-feet; 800 miles with capacities less than 50 second-feet.

Tunnels: Aggregate length, 2,300 feet.

Water power: None as yet developed. Probability of developing about 300,000 horsepower from Flathead River and principal mountain streams.

Irrigable area: 152,000 acres, as follows: Jocko division, 16,000 acres; Mission division, 23,000 acres; Post division, 30,000 acres; Crow division, 14,000 acres; Pablo division, 40,000 acres; Polson division, 6,000 acres; Big Arm division, 3,000 acres; Little Bitter Root division, 15,000 acres; Camas division, 5,000 acres.

Present status of irrigable land: Entered under acts of Congress approved April 23, 1904, and May 29, 1908, 64,000 acres; open to entry, 8,000 acres; withdrawn from entry, none; State Lands, 5,000 acres; private lands, 75,000 acres, mostly Indian allotments.

Agricultural Conditions.

Area for which the Service is prepared to supply water, season of 1912: 32,000 acres.

Average elevation of irrigable area: 2,800 feet above sea level.

Average annual rainfall on irrigable area: 15 inches.

Range of temperature on irrigable area: —30 degrees to 96 degrees F.

Character of soil of irrigable area: Varies from light sandy loam to heavy clay.

Principal products: Grain, hay, apples, vegetables, small fruits, and cattle.

Principal markets: Missoula, Butte, Anaconda, and other mining and lumber towns and camps.

Limit of area of farm units: 160 acres. Average irrigable, about 40 acres. Duty of water: Works will provide about 1.5 feet per acre per annum at the farm.

Building charges: Not fixed. Annual operation and maintenance charges: $1 per acre-foot; minimum charge, $1 per acre, 1911.

Chronological Summary.

Reconnaissance and preliminary surveys made in 1907.

Construction authorized and first appropriation made by act of Congress approved April 30, 1908.

Construction of canals, Jocko division, begun May, 1909.

Construction of Newell Tunnel, Polson division, begun June, 1909.

Construction of Pablo Feeder Canal begun in 1910.

Construction of Kickinghorse Feeder Canal began in 1911.

Kickinghorse Feeder Canal completed in 1912.

Percent completed on June 30, 1912: Whole project, 15 per cent; Jocko division, 84 per cent; Mission division, 11.6 per cent; Post division, 34.7 per cent; Crow division, 3 per cent; Pablo division, 36.3 per cent; Polson division, 9.8 per cent; Big Arm division, 14.5 per cent; Little Bitter Root division, 0.4 per cent; Camas division, 0.6 per cent.

Fort Peck (Indian) Project.

The plan of the Fort Peck project provides for the irrigation of about 152,000 acres of land in various parts of the Fort Peck Indian Reservation

and adjacent territory, as follows: (1) 4,000 acres in the vicinity of Wiota Station, with flood water supply from the Big Porcupine Creek; (2) 2,000 acres in the vicinity of Frazer, with water supply from Little Porcupine Creek, conserved by storage; (3) 28,000 acres in the vicinity of Poplar and extending along Poplar River a distance of about 35 miles with water supply from Poplar River conserved by storage below the forks of Poplar River and West Branch; (4) 16,000 acres lying along the west side of Big Muddy Creek, with water supply from Big Muddy Creek, conserved by storage on Smoke and Wolf Creeks; (5) 50,000 acres of clear bench land and approximately 34,000 acres of brush and timber land extending along the Missouri River, with water supply from the Missouri River by a gravity canal heading near the site of old Fort Peck; (6) 10,000 acres known as the Galpin Bottom, lying above the Missouri River Canal west of Milk River and the Fort Peck Indian Reservation, with water supply by pumping from the Missouri River Gravity Canal, with a lift of about 20 feet; (7) 8,000 acres lying above the Missouri River Canal, east of Milk River in the Fort Peck Indian Reservation, with water supply by pumping from the Missouri River Gravity Canal, with a lift of from 10 to 20 feet.

The features of the above irrigation plan which have been completed are the Little Porcupine unit to irrigate 2,000 acres and the first division of the Poplar River unit to irrigate 5,000 acres of land.

Location.

County: Valley.

Townships: 26 to 33 N., Rs. 40 to 55 E., Montana Meridian.

Railroad: Great Northern.

Railroad stations: Wiota, Kintyre, Frazer, Oswego, Lohmiller, Wolf Point, Macon, Chelsea, Poplar, Sprole, Brockton, Calais and Blair, Mont.

Water Supply.

Source of water supply: Missouri and Poplar Rivers; Big Porcupine, Little Porcupine, Wolf, Smoke and Big Muddy Creeks.

Area of Drainage basins: Missouri River, 85,000 square miles; Poplar River, 3,000 square miles.

Data for Complete Project.

(Estimated for uncompleted features.)

Storage reservoirs: Little Porcupine: Area, 390 acres; capacity, 3,900 acre-feet. Wolf Creek: Capacity, 4,550 acre-feet. Smoke Creek: Capacity, 5,300 acre-feet.

Storage dams: Little Porcupine, volume, 32,600 cubic yards of earth; 9,400 square yards brush mattress. Wolf Creek: Volume, 85,300 cubic yards of earth. Smoke Creek: Volume, 75,600 cubic yards of earth.

Diversion dams: Little Porcupine: Maximum height, 4 feet; length, 150 feet. "B Canal" Diversion Dam: Maximum height, 4 feet; length, 300 feet. Big Muddy Diversion Dam—Three and one for Big Porcupine unit projected, but dimensions not yet determined.

Length of canals: 124 miles with capacity of over 50 second-feet.

Dike: Length, 700 feet. Siphon—under Milk River—500 feet long.

Pumping Plants: Two units proposed with lifts of about 20 feet each, with canals and distributing system to cover an irrigable area of about 18,000 acres.

Agricultural Conditions.

Average elevation of irrigable area: 2,000 feet above sea level.
Average annual rainfall on irrigable area: 13 inches.
Range of temperature on irrigable area: —40 degrees to 100 degrees F.
Character of soil of irrigable area: Heavy clay and loam.
Principal products: Hay, grain and vegetables.
Principal markets: Local.

Lands Opened for Irrigation.

Pending the opening of the reservation the area to be furnished with water consists of the Indian allotments. The work of allotting has been practically completed, and the area allotted in each unit is as follows: Big Porcupine, 2,420 acres; Little Porcupine, 2,025 acres; Missouri Gravity Canal, 64,480 acres; Poplar River, 8,400 acres; Big Muddy, 13,360 acres.

Chronological Summary.

Reconnaissance and preliminary surveys made in 1908.
Construction work on Little Porcupine unit begun September, 1909.
Construction work on Poplar system begun September, 1910.
Little Porcupine unit 98 per cent completed June 30, 1911.
All construction work on project discontinued July 31, 1911.

FARM LANDS.

Lands Are Mountain Lands, Grazing Lands or Farm Lands—Farms, Irrigated, Non-irrigated—Dry Farm Lands—Reasons for Superiority of Montana Dry Farm Lands—Yields at Experiment Stations.

The surface of Montana is composed of three classes of land of about equal size, viz., in round numbers: Farm lands, 30,000,000 acres; grazing lands, 30,000,000 acres, and mountain lands, 30,000,000 acres. The mountain land contains the extensive mineral area and the forests which support the great mining and lumber industries, concerning which statistics are given elsewhere in this volume, also much grazing land, and the places of resort for the hunter and fisherman, the health seeker, and the lover of scenery of remarkable variety of beauty and grandeur. The grazing lands sustain the great live stock industry. The lands level enough to be cultivated with the machinery commonly used in farming operations are classed as arable lands and are estimated to number 30,000,000 acres. Massed in one body Montana's 30,000,000 acres of farm lands nearly equal Iowa's total acreage, including water surface, swamp, and bluff lands, of 35,856,000 acres; Illinois contains but 36,256,000 acres, Ohio 26,278,000, Indiana 23,264,000 and Kentucky 25,856,000. Leaving entirely out of consideration the 60,000,000 acres of mountainous and grazing lands and counting only the 30,000,000 acres of arable lands, Montana's farm lands are as extensive as the whole area of some great farming states and may be compared with the 7,278,720 acres in Belgium, 8,094,720 acres in Holland, and the 9,848,320 acres in Denmark—a total of 25,221,760 acres. Only about one-fifteenth of the arable lands are in cultivation.

The census of 1910 reports the number of farms in the state to be 26,214, of which 8,970 were irrigated and 15,244 non-irrigated. Certain features of climate, rainfall and soil are common to both. In so large a state the character of the soil at one place may be quite different from that at another; soils of many different kinds indeed are found; but in the whole state the number of acres on which some useful plant does not—or cannot—grow is relatively small. No soil survey of Montana has been made; although limited areas in two or three counties have been mapped and described only a beginning has been made in this important work. The Montana Agricultural Experiment Station at Bozeman, however, may be consulted as to the character of the soil of any particular district as it has collected data on the subject from many neighborhoods. The general statement may be made that throughout Montana the soil is rich in the primary elements of fertility; it has not been impoverished by the constant leaching which takes place in regions of heavy rainfall, nor, in the cultivated areas, by a succession of exhausting crops.

At high altitudes the seasons are short; above certain elevations no crops will mature; at the lowest elevations tomatoes, canteloupes and tender vegetables thrive; below 6,000 feet elevation most of the vegetables and grains common to the northern part of the United States make good yields.

Corn is becoming an important crop in certain sections, both for the ripened grain and for forage, on lands not above four thousand feet in elevation. Topographical conditions modify the temperature, the winds, and the frosts, and should be considered before a location is made, especially if fruits or tender vegetables are to be raised.

The climate, which varies somewhat with the sections, is favorable to the growth and maturity of nearly every crop grown in the northern half of the United States.

An idea of the variety of farm products grown may be had from the premium list of the Montana State Fair at which the prizes offered for the best specimens of the products named are keenly competed for viz:

Class 1.—Grains and Seeds: Soft winter wheat, hard winter wheat, soft spring wheat, hard spring wheat, macaroni wheat, spring rye, winter rye, white oats, colored oats, 2-row barley, 6-row barley, hulless barley, buckwheat, white field peas, millet seed, timothy seed, orchard grass seed, Hungarian grass seed, blue grass seed, mammoth clover seed, red clover seed, flax seed, yellow dent corn, white dent corn, white flint corn, yellow flint corn, sweet corn, pop corn, alfalfa seed, navy beans, brome grass seed, and blue joint seed.

Class 2.—Vegetables: Cucumbers, best gallon pickling cucumbers, Hubbard squashes, Boston marrow squashes, field pumpkins, largest pumpkin, largest squash, late cabbage, early cabbage, red cabbage, celery, Lima beans, string beans, cauliflower, red tomatoes, yellow tomatoes, muskmelons, citrons, watermelons, peppers, sugar cane and tobacco.

Class 3.—Root Crops: Rutabagas, flat turnips, globe turnips, carrots for table use, carrots for stock, horseradish, table beets, turnip beets, sugar beets, red mangelwurzels, yellow mangelwurzels, white mangelwurzels, parsnips, turnip radishes, winter radishes, summer radishes, red onions, yellow globe onions, white pickling onions, red onion sets, white onion sets, early white potatoes, late white potatoes, early red potatoes, late red potatoes.

Division F.—Fruit and Horticultural Products.—Apples: McIntosh, Alexander, Spitzenberg, Northern Spy, Wealthy, Duchess, Snow, Yellow Transparent, Jonathan, Gravenstein, Northwest Greening, Red Checked Pippin, King of Tompkins County, Rhode Island, Greening, Bethel, Rome Beauty, Wolf River, Bioni, Baltimore, Akin, Bellefleur, crabs; peaches, apricots, pears, blue plums, yellow plums, red plums, cranberries, grapes, and cider.

One reason for the luxuriance of the crops grown in the state in a comparatively short growing season which is not understood by those that live in a lower latitude is that the percentage of sunshine is greater in Montana than in other states. Throughout the upper and central sections of the Mississippi Valley the percentage of sunshine received is reported to be about 45 per cent of the possible amount while in Montana this percentage rises to 60 per cent or more. Other conditions being equal it is evident that the plant that receives the greatest amount of sunshine, if not too much, will make the best progress and development. There are, it seems, during the growing season four hours of sunshine in Montana to every three hours in the Mississippi Valley; and, as the nights are cool and blistering heat or winds very rare, crops grow as much in three months in Montana as they do in four in the Mississippi valley. Another reason is the timeliness of the supply of moisture to the soil.

Farm lands are of two kinds: (1) Irrigated and (2) non-irrigated.

Great crops are raised on irrigated lands, there is rarely a short crop and

never a crop failure where the supply of water is ample; some products succeed only on irrigated lands, and an irrigated district is always a country of small farms close together whose relatively dense population enjoys better social, educational, and church advantages than in unirrigated districts where farms are large and where such conveniences as telephones are usually, and electric light and power sometimes, found. They also offer favorable fields for electric railways. Good roads, too, should be a distinguishing feature of all irrigated districts.

Only a small portion of the irrigable area of Montana is now supplied with water; and when the projects now under construction, which by no means exhaust the possibilities of extending the irrigated area, farms for thousands of new settlers will be provided and the production of crops from irrigated lands multiplied many times. Elsewhere in this volume are accounts of land which have been reclaimed under the Carey Act, an article on the progress which has been made in the government reclamation projects and statistics on irrigation collected by the census bureau.

Prof. Alfred Atkinson of the Montana Agricultural College in speaking of irrigated farming in Montana says:

"To the uninitiated, farming under a system of irrigation appears complicated and expensive. He may appreciate the fact that returns are high, but he is afraid that the worry and expense connected with the irrigation is such that it would be an undesirable branch of agriculture to take up. The returns on irrigated farms are such as to make the bare statements of facts concerning them appear like an exaggeration to the unfamiliar ones. If a western man tells his eastern friends about the crop yields he has gained he is usually made an object of pity because he has so far forgotten his early training that he makes what appears to his friends wholly unwarranted statements. Presentation of a few figures showing the returns from one farm in Montana may serve to show something of the possibilities of an irrigated farm. These returns were gained under the ordinary methods, and while they are good, yet they are not extraordinary, and many other instances could be cited which show returns equally as good. The farm in question contained 160 acres and was divided as follows: Thirty acres in wheat, thirty acres in oats, eighty acres in clover and twenty acres in pasture, potatoes, etc. The thirty acres of wheat gave a yield of eighty-three bushels to the acre, which, figured at seventy-five cents a bushel, shows a gross return of $1,867.50. The thirty acres of oats yielded 100 bushels to the acre, which, when figured at 40 cents a bushel, shows a return of $1,200. The cutting of clover gave a yield of two tons to the acre, or 160 tons, which sold at $6 a ton, making $960. The second crop of clover was sold on the ground for pasture for $200. From the twenty acres devoted to pasture, potatoes, etc., $400 was gained. These different returns taken together make a total of $4,627.50 from 160 acres of average Montana land under irrigation. My reader from the humid sections will be asking concerning the cost of irrigation. While these results may be possible, is not the outlay for irrigation such as to take a large share of the returns? A recent bulletin published by the Department of Agriculture on the subject of 'Irrigation in Montana' shows the average cost of irrigation on the different crops. The figures are based on the actual cost to a large number of representative farmers, and show that $1.07 per acre will cover the cost of irrigation on the ordinary field crops. This would make irrigation on a 160 acre farm cost less than $200, which is a true statement, as the sum would very fully cover all the expense of maintaining the ditches, putting in the laterals, and hiring irrigators to spread the water over the ground."

Irrigated lands under private ditches may be bought in nearly every county at reasonable prices and there are excellent opportunities for the homeseeker to secure irrigated tracts on easy terms within the Carey Act and Government reclamation projects.

Unirrigated lands are also of two kinds; lands where the natural rainfall provides sufficient moisture for crops and where it is not necessary either to irrigate or to conserve the moisture by the dry farming system of cultivation; and lands where crops cannot be successfully grown unless the system of moisture conservation prescribed by the Montana scientific system of farming dry lands is followed. Crops grow very well without irrigation year after year in a large part of Western Montana and on many hundred thousands of acres on the eastern slope of the Rocky Mountains and in the foothills of the many outlying ranges. In the great plains region of Eastern and Northern Montana unirrigated crops will not, except in favored places, thrive unless moisture is conserved by the system known as dry land farming. "Dry land farming" is an unsatisfactory term that has come into general use, in the absence of a better name, to describe the methods of farming by which crops are successfully grown in semi-arid regions as the result of conserving the moisture that is naturally precipitated. Dry farming is a relative, not an absolute, term that is used in contrast to semi-humid or humid farming and is applied to the cultivation of lands where the annual precipitation is less than 20 inches. The closer the average amount of rainfall approaches 20 inches the greater is the certainty of success, as a rule; and as the point of no rainfall is approached, production diminishes until it finally ceases. The accompanying map shows that in no part of Montana is the average annual rainfall too low for the production of profitable crops when the proper system of dry farming practice is followed.

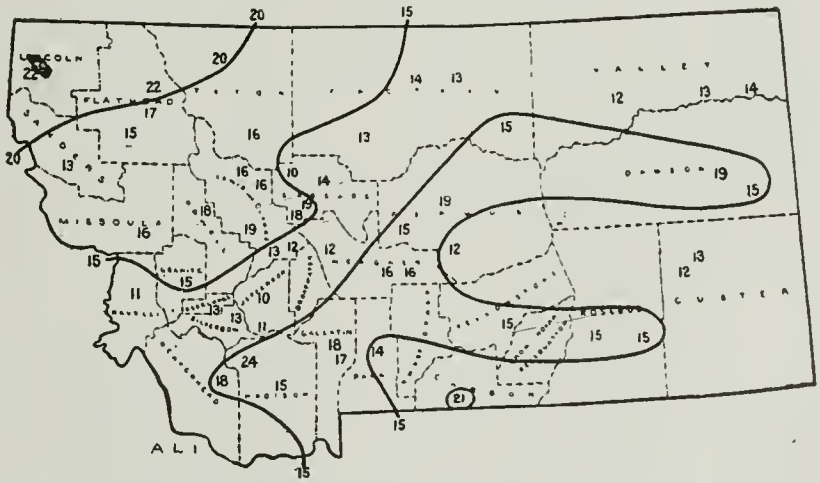


FIG. 11.—Rainfall map of Montana. The figures show the average annual rainfall in inches From Bulletin No. 188, Bureau of Plant Industry, U S. Dept of Agriculture.

The bare figures do not show the advantages the state enjoys because of the absence of hot winds, the smallness of evaporation, the lack of torrential rains, and the timeliness of the rainfall; considerations that add to the efficiency of the natural precipitation the equivalent of perhaps six inches of annual rainfall and put Montana in a class of its own among the states in the semi-arid region.

Reports of crop yields made at dry farming stations maintained by the Department of Agriculture in North Dakota, South Dakota, Nebraska, Kansas, Colorado, Texas and Montana show a great superiority over every one of the others at the Montana station which is located in the Judith basin.

Why the dry farm lands of Montana are more productive than lands within the dry farming belt of other states with an equal, or nearly equal, amount of annual precipitation is explained, in part, in Bulletin No. 288, United States Department of Agriculture, Bureau of Plant Industry, entitled, "Dry Farming in Relation to Rainfall and Evaporation," as follows:

"Dr. H. L. Shantz, of the Bureau of Plant Industry, finds that the distribution of a native grass is a good index of the rainfall required in different sections of the Great Plains. Short grass, which consists chiefly of buffalo grass and grama grass, is well suited for this purpose, since it occurs from Montana to Texas. In each section the grass grows as far west as the opposing influences of rainfall and evaporation will permit. Its growth to the east is checked by competition with the prairie grasses. Thus we have a strip of short grass extending from Montana to Texas, limited on the west side by drought and on the east side by competition with other grasses. Therefore the increase in the annual rainfall as we go from north to south in the short grass region represents the additional amount of rain needed to offset the increased evaporation. In Montana, short grass unmixed with other grasses occurs in districts having an annual rainfall of approximately 14 inches; in Colorado, in regions having a rainfall of 17 inches; and in the Panhandle of Texas, in regions having an annual rainfall of 21 inches.

"The same type of native grass requires in Texas 7 inches more of rain a year than in Montana. This gives us at once a measure of the additional amount of rain required for a grain crop in Texas as compared with Montana. Furthermore, the evaporation in Texas during the six summer months exceeds that in Montana by about 20 inches. Therefore, if the summer evaporation at one place in the Great Plains exceeds that at another by 3 inches a corresponding increase in the summer rainfall of approximately 1 inch at the first place is needed to offset the increased evaporation. A rainfall of 21 inches in the Panhandle of Texas is really therefore no better for growing crops than 15 inches in Montana or Dakota, owing to the greatly increased evaporation on the Texas plains."

Upon the important question of timeliness—or seasonable distribution—of the rainfall, Director Linfield of the Montana Agricultural Experiment Station has made the following observations:

"There is another peculiarity of Montana rainfall that is interesting and of special importance to the dry land farmer. On the coast the season of greatest rainfall is during the winter season, the lighter rainfall coming in the months of June, July and August. East of the Cascades, though the rainfall is less, the winter and spring are also the wettest seasons and the summer and early fall are dry. Coming now east of the Rocky Mountains we find the maximum rainfall comes during the late spring and early summer months. In a measure, the rainfall of this region is complementary to that of the coast. The importance of this fact agriculturally and to our dry farm work is that the season of maximum rainfall is at the season of the year when it is of the greatest value for the growth of crops, viz., April, May, June and July. During these monthes we get nearly as much rainfall as in the humid districts of the East."

Mr. F. H. Ray, register of the state land office, has compiled from the reports of the United States Weather Bureau a table which shows that in Montana during the months of April, May, June, July and August the average precipitation is 8.6 inches and for the same months in the Willamette Valley, Oregon, 8.2 inches. The comparison is of the average precipiation at 34 Montana stations with the average of nine stations in Oregon, including Portland.

The following table supports the quoted conclusions of Mr. Linfield:

PRECIPITATION RECORDS—1905 TO 1910 INCLUSIVE.

Station.	County.	Mean Annual	Mean during growing seasons. By months.					Percentage of annual.
			April	May	June	July	Total.	
Bozeman	Gallatin	19.05	1.34	1.19	4.19	2.79	9.51	49.9
Billings	Yellowstone	14.28	1.44	3.34	2.02	0.93	7.73	54.1
Chinook	Chouteau	11.11	0.14	2.13	3.49	1.38	7.14	64.3
Dillon	Beaverhead	19.16	1.20	4.30	3.05	1.60	10.15	52.9
Fallon	Custer	11.22	0.44	2.73	3.14	1.31	7.62	67.9
Forsyth	Rosebud	13.70	1.00	2.82	2.87	1.10	7.79	56.9
Glendive	Dawson	14.65	0.85	2.95	3.42	1.71	8.93	60.9
Great Falls	Cascade	19.07	1.05	2.83	5.05	1.81	10.74	56.3
Havre	Chouteau	11.79	0.56	2.05	3.06	1.30	6.37	59.1
Helena	Lewis and Clark	14.03	0.74	2.69	3.28	1.06	7.77	55.4
Miles City	Custer	15.21	0.98	3.15	3.25	1.81	9.19	60.4
Utica	Fergus	17.55	0.70	3.40	3.89	2.34	10.33	58.8

Although for every one of the last five years there has been a large increase in the number of acres of dry land placed in cultivation, Montana maintains a leading position among the states of the Union for the average production of grain per acre. The great crops that have been grown on non-irrigated lands have demonstrated not only the value as farm lands of the acres cropped, but of the millions of acres of lands of the same kind on benches and prairies that have never been plowed.

To be successful in farming dry lands in Montana the system of cultivation recommended by the Montana Agricultural Experiment Station should be followed There are two dry farm experiment stations, and nineteen demonstration dry farms which have been located in different parts of the state on land representing the average unoccupied public land of the vicinity. The Montana Agricultural Experiment Station is located at Bozeman and the dry farm substation in Fergus County, near Moccasin. The demonstration dry farms are located near the following towns: Wibaux, Dawson County; Circle, Dawson County; Baker, Custer County; Terry, Custer County; Huntley, Yellowstone County; Clyde Park, Park County; Twin Bridges, Madison County; Dillon, Beaverhead County; Helena, Lewis and Clark County; Great Falls, Cascade County; Conrad, Teton County; Box Elder, Hill County; Harlem, Blaine County; Glasgow, Valley County; Froid, Valley County; Moccasin, Fergus County; Harlowton, Meagher County; Roundup, Musselshell County; Drummond, Granite County; Ronan, Missoula County, and Eureka, Lincoln County.

Results at the various demonstration farms covering a number of years will be found in the tables that follow, and are not less encouraging for later years which have not yet been published.

The Director of the Montana Agricultural Experiment Station at Bozeman, F. B. Linfield, may be consulted on any matters relating to the proper methods of farming in Montana; and he has for free distribution bulletins on many subjects of interest and practical value to farmers that may be had for the asking.

YIELDS OF DIFFERENT KINDS OF GRAIN—AVERAGE RESULTS FROM ALL STATIONS FOR ALL YEARS TESTED.

(From Bulletin 74 of the Montana Agricultural Experiment Station.)

CROP.	VARIETY.	Period of Growth—Days.....	BUSHELS PER ACRE.						
			Dawson County.....	Rosebud County.....	Yellowstone County...	Cascade County.....	Chouteau County.....	Total.....	Average.....
Fall wheat	Turkey Red	320	36.63	50.41	29.03	....	35.02	150.82	37.71
" "	Lofthouse	320	28.80	41.95	25.97	....	....	96.72	32.24
" "	Gold Coin	321	34.60	46.63	30.63	....	....	111.85	37.28
Fall rye	Common	328	32.50	31.82	34.11	....	15.43	113.86	28.47
Spring wheat	Kubanka	100	17.57	20.80	19.32	12.83	21.40	91.92	18.38
" "	Ghirka	109	....	....	....	16.93	....	16.93	16.93
" "	Glyndon	109	....	....	....	12.77	....	12.77	12.77
Barley	White Hulless	95	20.90	28.31	12.33	15.57	11.95	89.06	17.81
"	California	97	22.85	34.38	11.67	12.08	13.71	94.69	18.94
Oats	Sixty Day	98	51.00	40.03	47.94	21.75	27.06	187.78	37.56
"	Canadian White	99	46.25	....	19.88	20.00	40.38	126.51	31.63
Flax	Common	105	14.06	13.09	2.04	10.29	8.56	48.04	12.01
Grasses	Brome	81	....	1.40	1.00	....	....	2.40	1.20
"	Tall Oat	75	....	1.08	1.00	....	....	2.08	1.04
Alfalfa	Common	....	....	....	.67	1.26	....	1.92	.97
Potatoes	Mill's Prize	151	147.56	160.70	98.43	....	88.78	495.47	123.87
Sugar beets	Kleinwanzlebener	184	....	*6.28	*7.00	....	....	*13.28	*6.64
Corn for fodder	Western Dent	....	....	*4.44	*2.90	....	....	*7.34	*3.67

*Tons.

FALL WHEAT TESTS.

(From Bulletin 83 of the Montana Agricultural Experiment Station.)

STATION.	VARIETY.	1907		1908		1909		1910		Average.	
		Bushels per acre..	Period of growth days.....	Bushels per acre..	Period of growth days.....	Bushels per acre..	Period of growth days.....	Bushels per acre..	Period of growth days.....	Bushels per acre..	Period of growth days.....
Forsyth.....	Turkey Red	58.17	315	42.10	324	27.53	341	21.26	316	37.27	324
"	Gold Coin	54.77	318	38.47	324	17.77	346	16.28	326	31.82	328
"	Lofthouse	47.30	318	36.60	324	24.50	346	19.28	326	31.97	328
Glendive.....	Turkey Red	.....	.....	36.63	326	32.10	351	*	.....	34.36	338
"	Gold Coin	.....	.....	34.60	326	29.93	355	*	.....	32.26	340
"	Lofthouse	.....	.....	28.80	326	35.87	355	*	.....	32.33	340
Billings.....	Turkey Red.....	.....	.....	29.03	313	19.80	336	.....	.....	24.41	324
"	Gold Coin	.....	.....	30.63	313	25.57	345	.....	.....	28.10	329
"	Lofthouse	.....	.....	25.97	313	21.83	345	.....	.....	23.90	329
**Fergus.....	Turkey Red	.....	.....	.....	....	29.81	359	37.70	.....	33.77	359
"	Crimean 1433	.....	.....	.....	....	30.66	359	40.10	.....	35.38	359
"	Kharkov 1583	.....	.....	.....	....	32.83	359	48.00	.....	40.41	359
"	Beloglina 1543	.....	.....	.....	....	26.66	361	40.50	.....	33.58	361
"	Red Russian 1532	.....	.....	.....	....	18.35	364	29.40	.....	23.87	364
"	Weissenburg 1563	.....	.....	.....	....	24.66	377	35.30	.....	29.98	377

*Winterkilled. **In cooperation with U. S. Department of Agriculture.

BARLEY TESTS.

(From Bulletin 83 of the Montana Agricultural Experiment Station.)

STATION.	VARIETY.	1907		1908		1909		1910		Average.	
		Bushels per acre.	Period of growth days.	Bushels per acre.	Period of growth days.	Bushels per acre.	Period of growth days.	Bushels per acre.	Period of growth days.	Bushels per acre.	Period of growth days.
Harlem	White Hulless	25.90	100	7.87	106	47.63	114	.....	....	27.13	107
"	California	21.50	94	13.71	106	62.79	117	.....	....	32.67	106
Glendive	White Hulless	.....	....	20.90	85	29.30	113	1.20	106	17.13	101
"	California	.....	....	22.85	85	52.96	113	2.00	106	25.94	101
Great Falls	White Hulless	.....	....	15.57	112	*	....	13.73	110	14.65	111
"	California	.....	....	12.08	116	*	....	23.46	113	17.77	114
Billings	White Hulless	.....	....	12.33	97	21.77	117	.....	....	17.05	107
"	California	.....	....	11.67	97	32.54	115	.....	....	22.10	106
East Terry	White Hulless	.....	....	.....	....	11.73	98	14.47	93	13.10	95
"	California	.....	....	.....	....	22.29	103	20.63	98	21.46	100
South Terry	White Hulless	.....	....	.....	....	10.53	91	19.21	88	14.87	90
"	California	.....	....	.....	....	17.47	98	8.75	93	13.11	96
**Fergus	White Hulless	.....	....	.....	....	42.40	89	16.40	98	29.20	93
"	California	.....	....	.....	....	.....	....	15.20	99	15.20	99
"	Mansbury	.....	....	.....	....	45.70	90	13.00	99	29.35	94
"	Guy Mayle	.....	....	.....	....	33.20	100	12.10	103	22.65	101
"	Hanna	.....	....	.....	....	53.30	90	11.00	99	32.15	94
"	Bohemian	.....	....	.....	....	48.50	98	11.20	104	29.85	101

*In 1909, at Great Falls, the White Hulless and California barleys in the variety tests were destroyed by wind and drifting sand.
**In cooperation with the U. S. Department of Agriculture.

OAT TESTS.

(From Bulletin 83 of the Montana Agricultural Experiment Station.)

STATION.	VARIETY.	1907		1908		1909		1910		Average.	
		Bushels per acre..	Period of growth days.....	Bushels per acre..	Period of growth days.....	Bushels per acre..	Period of growth days.....	Bushels per acre..	Period of growth days.....	Bushels per acre..	Period of growth days.....
Glendive.....	Sixty-Day	.....	.....	51.00	95	71.25	108	5.60	95	42.62	99
"	Canadian	.....	.....	46.25	103	83.13	113	3.81	95	44.40	104
Great Falls.....	Sixty-Day	.....	.....	21.75	101	36.25	141	24.06	102	27.35	115
"	Canadian White	.....	.....	20.00	115	25.00	145	21.50	111	22.17	124
Harlem.....	Sixty-Day	51.81	92	27.06	94	104.50	113	.....	....	61.12	99.7
"	Canadian White	54.50	93	26.25	106	73.69	120	.....	....	51.48	106.3
Billings.....	Sixty-Day	.....	.....	43.19	97	43.88	115	.....	....	43.53	106
"	Canadian White	.....	.....	19.88	97	34.25	122	.....	....	27.06	109
East Terry.....	Sixty-Day	.....	.....	.....	....	33.72	105	40.00	96	36.86	100
"	Canadian White	.....	.....	.....	....	30.81	118	26.00	106	28.40	112
South Terry.....	Sixty-Day	.....	.....	.....	....	28.37	92	17.62	82	22.99	87
"	Canadian White	.....	.....	.....	....	19.44	103	19.64	93	19.54	98
*Fergus.....	Sixty-Day	.....	.....	20.50	95	84.40	103	33.00	....	45.97	99
"	Canadian White	.....	.....	5.00	108	82.60	121	14.20	....	33.93	114
"	Danish.....	.....	.....	20.00	104	76.80	122	23.60	....	40.13	113
"	White Russian	.....	.....	5.00	99	81.00	127	7.60	....	31.20	113
"	Sparrowbill	.....	.....	15.00	104	69.00	124	20.10	....	34.70	114
"	Swedish Select	.....	.....	15.00	99	77.00	121	22.30	....	38.10	110

*In cooperation with U. S. Department of Agriculture.

SPRING WHEAT TESTS.

(From Bulletin 83 of the Montana Agricultural Experiment Station.)

STATION.	VARIETY.	1907		1908		1909		1910		Average.	
		Bushels per acre..	Period of growth days.....	Bushels per acre..	Period of growth days.....	Bushels per acre..	Period of growth days.....	Bushels per acre..	Period of growth days.....	Bushels per acre..	Period of growth days.....
Forsyth.....	Kubanka	29.83	101	.....	....	25.83	114	12.03	91	22.56	102
"	Ghirka	25.00	123	.....	....	25.27	92	19.50	91	23.26	102
Great Falls.....	Kubanka	.....	.....	12.83	109	20.67	144	.....	....	16.75	126
"	Glyndon	.....	.....	12.77	118	27.00	144	.....	....	19.88	131
"	Ghirka	.....	.....	16.93	109	22.67	144	.....	....	19.80	126
East Terry.....	Kubanka	.....	.....	.....	....	17.80	95	12.17	103	14.98	99
"	Pringle's Champion	.....	.....	.....	....	17.00	105	14.83	103	15.91	104
South Terry.....	Kubanka	.....	.....	.....	....	.....	....	12.83	90	12.83	90
"	Pringle's Champion	.....	.....	.....	....	.....	.....	11.37	90	11.37	90
*Fergus.....	Kubanka	.....	.....	5.00	117	37.77	127	8.80	....	17.19	122
"	Ghirka	.....	.....	3.33	117	36.66	123	16.00	....	18.66	120
"	Yellow Gharnovka	.....	.....	15.00	117	39.33	128	8.20	....	20.84	122
"	Pelissier	.....	.....	10.00	117	41.00	128	10.50	....	20.50	122
"	Purple Durum	.....	.....	10.00	108	39.00	126	8.50	....	19.17	117
"	Galgalos	.....	.....	7.50	105	40.16	122	18.50	....	22.05	113

*In cooperation with U. S. Department of Agriculture.

MISCELLANEOUS CROP TESTS.
(From Bulletin 83 of the Montana Agricultural Experiment Station.)

STATION.	CROP.	1906 Yield	1907 Yield	1908 Yield	1909 Yield	1910 Yield	Av. Yield
Forsyth	Bushels flax per acre	16.09	12.70	10.57	.....	10.35	12.43
"	Tons sugar beets per acre	4.13	6.28	.....	.....	.....	5.20
"	Bushels corn per acre	.....	.....	40.17	28.56	.....	32.36
"	Tons corn fodder per acre	.....	5.51	4.44	9.36	1.7	5.25
"	Bushels potatoes per acre	.....	160.70	10.80	281.57	93.78	137.96
"	Tons alfalfa per acre	.....	.....	.....	1.60	.....	1.60
"	Tons brome grass per acre	.....	.....	1.40	3.16	.....	1.78
"	Tons tall oat grass per acre	.....	.....	1.08	2.60	.....	1.84
Glendive	Bushels flax per acre	.....	13.25	14.86	.....	.....	14.05
"	Tons corn fodder per acre	.....	.....	2.90	3.28	1.50	2.56
"	Bushels potatoes per acre	.....	60.60	14.77	38.67	25.00	34.76
"	Tons alfalfa per acre	.....	.....	.....	1.34	.....	1.34
"	Tons brome grass per acre	.....	.....	.....	1.24	.....	1.24
"	Tons tall oat grass per acre	.....	.....	.....	1.40	.....	1.40
Great Falls	Bushels flax per acre	.....	.....	10.29	.....	11.71	11.00
"	Tons corn fodder per acre	.....	.....	2.98	2.00	1.75	2.24
"	Bushels potatoes per acre	.....	.....	68.90	95.00	86.25	83.38
Harlem	Bushels flax per acre	6.43	14.04	5.21	19.78	.....	11.36
"	Bushels potatoes per acre	89.87	67.97	108.50	80.00	.....	86.58
Billings	Bushels flax per acre	.....	14.57	2.04	.....	.....	8.35
"	Tons sugar beets per acre	.....	6.49	7.00	12.92	.....	8.80
"	Tons corn fodder per acre	.....	.....	2.90	2.48	.....	2.69
"	Bushels potatoes per acre	.....	113.26	98.43	82.33	.....	98.01
"	Tons alfalfa per acre	.....	.....	.67	1.42	.....	1.04
"	Tons brome grass per acre	.....	.....	1.00	.63	.....	.87
"	Tons tall oat grass per acre	.....	.....	1.00	1.22	.....	1.11
East Terry	Bushels flax per acre	.....	.....	.....	10.54	5.36	7.95
"	Tons corn fodder per acre	.....	.....	.....	2.11	1.50	1.80
"	Bushels potatoes per acre	.....	.....	.....	54.23	51.20	52.72
South Terry	Bushels flax per acre	.....	.....	.....	7.07	3.75	5.41
"	Tons corn fodder per acre	.....	.....	.....	1.98	1.44	1.71
"	Bushels potatoes per acre	.....	.....	.....	53.96	48.40	51.18
Fergus	Bushels flax per acre	.....	.....	10.30	17.60	.....	13.95
"	Tons corn fodder per acre	.....	.....	1.24	5.76	.....	3.50
"	Bushels potatoes per acre	.....	.....	.....	298.00	.....	298.00
"	Tons alfalfa per acre	.....	.....	.....	3.05	.....	3.05

Bulletin 83 goes on to state the profit from raising the different crops on dry lands and the conclusions reached by the writers after six years' experiments in the following words:

For the man on the farm, the question of the relative amount of profit which may be expected from different crops is the important one. Table X shows the average yield of the different crops tested at all stations during all the years. Using these yields as a basis and assuming a fair average cost for raising the crop, the net profits per acre have been figured. We realize that the cost of production will vary with localities, and in different years. In computing the cost of raising the various crops, the prices for the different kinds of work are placed at the cost of such work in the open market. This permits of hiring the work done or allows wages for the farmer and deterioration charges on machinery, when the work is done by the farmer and the equipment is owned on the farm.

With the grain crops the following figures were used:

Plowing ..... $3.00 per acre.
Disking ..... 1.00 per acre.
Harrowing four times ..... 1.20 per acre.

Seeding	.40 per acre.
Seed at market price	
Harvesting, including twine	1.50 per acre.
Shocking	.30 per acre.
Threshing:	
Oats	.05 per bushel.
Brewing barley	.06 per bushel.
Hulless barley	.07 per bushel.
Wheat	.07 per bushel.
With Potatoes:	
Plowing, disking, harrowing	5.20 per acre.
Seed, 12 bushels at 60 cents per bushel	7.20 per acre.
Planting	1.20 per acre.
Cultivation during growth	1.00 per acre.
Harvesting	6.60 per acre.
Total	$21.20 per acre.

For sugar beets, since the matter of raising this crop is a matter of common knowledge, the production charge of $33.75 per acre was allowed.

With fodder corn:	
Plowing, disking, harrowing	$5.20 per acre.
Seed	.25 per acre.
Planting	.30 per acre.
Cultivation during growth	1.00 per acre.
Harvesting and curing	1.25 per acre.
Total	$8.00 per acre.

In the case of the forage crops, alfalfa and grasses, the only charge after the crop is planted would be for occasional disking during the summer and for cutting, curing and stacking the hay. Allowing that the expense for getting the crop started is distributed over the productive years, it seemed fair to accept the charge of $2.50 per acre as reasonable annual cost for raising dry land hay crops.

The prices of the different grain crops were taken from the "Yearbook" of the United States Department of Agriculture, and are the average market value of the various products for the past five years in Montana. The prices for alfalfa and grass crops are not from the "Yearbook," but are placed at the figure which seems to be the average price that has been paid in the various communities.

As might be expected, the largest net profit per acre is from potatoes. In addition to its value for market purposes, this crop permits the farmer to get his land into good condition for succeeding crops. Intertillage may be carried on during growth, which prevents unnecessary loss of moisture by evaporation and permits the accumulation of water in the soil for succeeding crops. The use of intertilled crops will be discussed in connection with the crop arrangement studies taken up later.

Of the grain crops, and these will always claim the largest place on the dry farm, the fall or winter wheats are clearly most profitable. The Kharkov, an improved Turkey Red, stands at the head of the list, with an average of 40.41 bushels per acre, and a net acre crop profit of $21.30. As was noted in Table V, this variety has not been grown at all stations and so has not been subjected to so thorough a test as have the Turkey Red, Loftlouse and Gold Coin varieties. The Turkey Red, which has been very fully tested, shows a yield of 32.45 bushels per acre, and a net profit of $14.49 in the average of all stations for the past four years. These returns indicate that Turkey Red winter wheat is adapted for very profitable growth on the non-irrigated lands of Montana.

Of the spring grains extensively tested, the Sixty-Day oats, flax, and hulless barley are among the most profitable.

It is of interest to note the yield and net profit from corn that was allowed to mature grain. The average of 32.36 bushels per acre, with an average net profit of $14.43, indicates the important place which corn is destined to hold as a grain

producer in this state. When cut green and cured for fodder, we find it has a high value, producing 2.82 tons per acre, giving at an average price a net return of $11.74.

Turning to the forage crops we find alfalfa standing at the head of the list with a yield of 1.87 tons per acre and an average value of $12.15. Such production of very valuable hay, coupled with the fact that alfalfa is a soil improving crop, means much to the dry land farmer. As rotations come to be worked out, it is evident that the nitrogen-adding, soil-improving crop, which will be grown at intervals on successfully managed dry farms, will he the "king of forage crops," alfalfa.

Brome grass and tall oat grass are hardy growers and do well as hay producers. They are also valuable in dry land pasture mixtures.

Sugar beets evidently were not intended for commercial production on non-irrigated farms. While the yield is too low for this purpose, yet hog raisers and dairy farmers on the dry farm may find that even 7 tons per acre is profitable when the crop is used as a stock food.

As a general summary of the six years' work, it is fair to say that the non-irrigated lands of Montana may be made to raise profitable crops under proper methods of tillage and crop management. Such yields as 32.45 bushels of Turkey Red wheat; 16.86 bushels of Kubanka spring wheat; 40.06 bushels of Sixty-Day oats; 32.36 bushels of matured corn; 105.32 bushels of potatoes, and 1.87 tons of alfalfa to the acre, in an average of all the tests in the various parts of the state for a period of six years, warrant this statement.

TABLE X. From Bulletin 83 of the Montana Agricultural Experiment Station.—Average yields, farm values, cost of production and net profits per acre of different crops, from all stations, for all years tested.

CROP.	Average yield per acre.....	Average market value.....	Average farm value per acre...	Average cost of production per acre.....	Net profit per acre.....
	Bu.				
Turkey Red fall wheat	32.45	$0.80	$25.96	$10.47	$14.49
Lofthouse fall wheat	29.45	.70	20.58	10.16	10.42
Gold Coin fall wheat	30.73	.70	21.51	10.25	11.26
*Crimean 1433 fall wheat	35.38	.80	28.30	10.68	17.62
*Kharkov 1583 fall wheat	40.41	.80	32.33	11.03	21.30
*Beloglina 1543 fall wheat	33.58	.80	26.86	10.55	16.31
*Red Russian 1532 fall wheat	23.87	.80	19.10	9.87	9.23
*Weissenburg 1563 fall wheat	29.98	.80	23.98	10.30	13.68
Kubanka spring wheat (durum)	16.86	.70	11.80	9.28	2.52
*Yellow Kharnovka spring wheat (durum)	20.84	.70	14.59	9.56	5.03
*Pellissier spring wheat (durum)	20.50	.70	14.35	9.53	4.82
*Purple Durum spring wheat	19.17	.70	13.42	9.44	3.98
*Galgalos spring wheat (durum)	22.05	.70	15.43	9.64	5.79
Ghirka spring wheat	20.57	.80	16.46	9.64	6.82
Glyndon spring wheat	19.88	.80	15.90	9.59	6.31
Pringle's Champion spring wheat	13.64	.80	10.91	9.15	1.76
Sixty-Day White oats	40.06	.45	18.03	9.85	8.18
Canadian White oats	32.43	.45	16.21	9.47	6.74
*Danish oats	40.13	.45	18.06	9.85	8.21
White Russian	31.20	.45	14.04	9.42	4.62
*Sparrowbill oats	34.70	.45	15.61	9.58	6.03
*Swedish Select oats	38.10	.45	17.14	9.75	7.39
White Hulless barley	19.05	.70	13.33	9.43	4.03
California barley (brewing)	21.78	.60	13.07	9.30	3.77
*Manshury barley (brewing)	29.35	.60	17.61	9.76	7.85
*Guy Mayle barley (hulless)	22.65	.70	14.85	9.68	5.17
*Hanna barley (brewing)	32.15	.60	19.29	9.93	9.36
*Bohemian barley (brewing)	29.85	.60	17.91	9.79	8.12
Fall rye	27.24	.68	18.52	9.99	8.53
Flax	10.45	1.60	16.72	9.45	7.27
Corn	32.36	.74	23.95	9.52	14.43
Potatoes	105.32	.60	63.19	21.20	41.99
	Tons				
Corn cut green and cured for fodder	2.82	7.00	19.74	8.00	11.74
Alfalfa	1.87	9.00	16.83	2.50	12.15
Brome grass	1.28	9.00	11.52	2.50	8.95
Tall oat grass	1.45	5.00	7.25	2.50	4.64
Sugar beets	7.00	5.00	35.00	33.75	1.25

*Grown at Fergus County Station only.

FARMS AND FARM PROPERTY IN MONTANA IN 1910.
From the United States Census Report.

Population	376,053
Population in 1900	243,329
Number of all farms	26,214
Number of all farms in 1900	13,370
Color and nativity of farmers:	
Native white	18,165
Foreign-born white	6,853
Negro and other nonwhite	1,196
Number of farms, classified by size:	
Under 3 acres	274
3 to 9 acres	229
10 to 19 acres	252
20 to 49 acres	956
50 to 99 acres	1,260
100 to 174 acres	10,552
175 to 259 acres	1,566
260 to 499 acres	6,773
500 to 999 acres	2,353
1,000 acres and over	1,999
LAND AND FARM AREA.	
Approximate land area—acres	93,568,640
Land in farms—acres	13,545,603
Land in farms in 1900—acres.	11,844,454
Improved land in farms—acres.	3,640,309
Improved land in farms in 1900—acres	1,736,701
Woodland in farms—acres	595,870
Other unimproved land in farms —acres	9,309,424
Per cent of land area in farms	14.5
Per cent of farm land improved	26.9
Average acres per farm	516.7
Average improved acres per farm	138.9
VALUE OF FARM PROPERTY.	
All farm property	$347,828,770
All farm property in 1900	$117,859,823
Per cent increase, 1900-1910	195.1
Land	$226,771,302
Land in 1900	$52,660,560
Buildings	$24,854,628
Buildings in 1900	$9,365,530
Implements and machinery	$10,539,653
Implements, etc., in 1900	$3,671,900
Domestic animals, poultry, and bees	$85,663,187
Domestic animals, etc., in 1909	$52,161,833
Per cent of value of all property in—	
Land	65.2
Buildings	7.1
Implements and machinery	3.0
Domestic animals, poultry, and bees	24.6

Average values:	
All property per farm	$13,269
Land and buildings per farm	$9,599
Land per acre	$16.74
Land per acre in 1900	$4.45
DOMESTIC ANIMALS. (Farms and ranges)	
Farms reporting domestic animals	23,690
Value of domestic animals	$84,999,659
Cattle:	
Total number	943,147
Dairy cows	77,527
Other cows	372,798
Yearling heifers	100,784
Calves	82,626
Yearling steers and bulls	90,433
Other steers and bulls	170,267
Value	$27,474,122
Horses:	
Total number	315,956
Mature horses	251,134
Yearling colts	41,491
Spring colts	11,717
Value	$27,115,764
Mules:	
Total number	4,174
Mature mules	3,021
Yearling colts	1,023
Spring colts	130
Value	$445,278
Asses and burros:	
Number	160
Value	$55,181
Swine:	
Total number	99,261
Mature hogs	56,342
Spring pigs	42,919
Value	$858,829
Sheep:	
Total number	5,380,746
Rams, ewes and wethers	4,959,835
Spring lambs	420,911
Value	$29,028,069
Goats:	
Number	5,045
Value	$22,416
POULTRY AND BEES.	
Number of poultry of all kinds	966,690
Value	$628,436
Number of colonies of bees	6,313
Value	$32,112

AGRICULTURAL STATISTICS.

In many states assessors are required to report the acreage in crops in their respective counties to a designated state officer who, using the acreage reports as a basis and aided by reports from threshermen and volunteer correspondents as to yields, is able to make an approximately correct estimate of the crop production for the current year, but as no such reports are made to this or any other office in Montana no official state statistics of crop production are available.

The only official statistics on the subject available, other than the reports of the census office for the last decennial period, are those contained in the Year Books and in various issues of the Crop Reporter published by the United States Department of Agriculture. These estimates are based on reports made by agents of the census office at the last decennial census with a percentage of increase added in accordance with information furnished by correspondents in various parts of the state, and compilations of crop yields are made from reports from the same sources. No estimate is published of the acreage and yields by counties, the acreage, the total production and the value of the crop being given for the whole state. In the old, thickly settled states where the farming industry is well established fairly satisfactory results may perhaps be obtained by the system of collecting crop statistics which the Department of Agriculture has adopted, but it does not produce satisfactory results in Montana where the area of land in cultivation increases each year at a rate almost unprecedented in the history of the development of the farming regions of the United States. Under such conditions it may not be surprising that crop correspondents of the government have failed to report many thousand of acres that have been planted to crops for the first time in each of the last three years and, consequently, that the department has not allowed for a sufficient percentage of increase. In the opinion of this office, an opinion held also, it is believed, by members of the staff of the Agricultural Experiment Station, railroad and elevator men, secretaries of commercial clubs and other observers, the estimate of the Department of Agriculture of the acreage of staple crops is far below the true amount. To estimate the acreage in staple crops to be twenty-five per cent greater than the government's figures would seem to be conservative. However, as the statistics of agriculture contained in the census reports and in the publications of the Department of Agriculture are the only official ones available, they are given in the form of tables in this chapter for the state at large and for each county as contained in the census report in the descriptions of the counties in the latter part of this book.

The Department of Agriculture gave out during the last week in December a final estimate of the crop production of Montana for the year 1912. The final figures, which are higher than were the preliminary estimates, are as follows:

Turkey Red Wheat—58 Bushels to the Acre.

MONTANA CROP STATISTICS FOR 1912.

Crop.	Acres.	Yield per Acre.	Production In Bushels.	Value.
Wheat	803,000	24.1	19,346,000	$12,381,000
Oats	476,000	48.0	22,848,000	7,997,000
Barley	39,000	36.5	1,424,000	755,000
Rye	10,000	23.5	235,000	141,000
Corn	24,000	25.5	612,000	428,000
Flaxseed	460,000	12.0	5,520,000	6,182,000
Potatoes	37,000	165.0	6,105,000	2,442,000
Hay	640,000	1.9 Tons	1,216,000*	10,093,000
Total	2,489,000	.....	56,090,000	$40,419,000

*Tons.

In 1912 the acreage in winter wheat was 475,000, the average yield per acre 24.5 bushels, the production 11,638,000 bushels of the value December 1, 1912, of $7,448,000. The acreage of spring wheat in 1912 was 328,000, the average yield per acre 23.5 bushels, and the production 7,708,000 bushels of the value December 1, 1912, of $4,933,000. The acreage of both varieties of wheat was 803,000, the average yield per acre 24.1 bushels and the production 19,246,000 bushels of the value, December 1, 1912, of $12,381,000. The average yield of winter wheat per acre in the United States was 15.1 bushels and in Montana 24.5 bushels; the average yield per acre of spring wheat in the United States was 17.2 bushels and in Montana 23.5 bushels; of both kinds of wheat the average yield per acre in the United States was 15.9 bushels and in Montana 24.1 bushels.

MONTANA CROP STATISTICS FOR 1911.

Crop.	Acres.	Yield per Acre.	Production In Bushels.	Value.
Wheat	429,000	28.7	12,299,000	$9,470,000
Oats	425,000	49.8	21,165,000	8,466,000
Barley	31,000	34.5	1,070,000	728,000
Rye	10,000	23.0	184,000	132,000
Corn	20,000	26.5	530,000	424,000
Flaxseed	425,000	7.7	3,272,000	5,890,000
Potatoes	27,000	150.0	4,050,000	2,997,000
Hay	605,000	2.0 Tons	1,210,000*	12,100,000
Total	1,970,000	....	42,570,000	$40,207,000

*Tons.

A comparison of the crop statistics of 1912 with those of 1911 shows the following results:

Wheat increased 87 per cent in acreage, 57 per cent in production and 27 per cent in value.

Oats increased 12 per cent in acreage, .08 per cent in production and decreased 5 per cent in value.

Barley increased 26 per cent in acreage, 33 per cent in production and 4 per cent in value.

Rye increased 25 per cent in acreage, 28 per cent in production and 7 per cent in value.

Corn increased 20 per cent in acreage, 16 per cent in production and 1 per cent in value.

Flaxseed increased 8 per cent in acreage, 68 per cent in production and 5 per cent in value.

Potatoes increased 37 per cent in acreage, 50 per cent in production and decreased 19 per cent in value.

Hay increased 6 per cent in acreage, .005 per cent in production and decreased 17 per cent in value.

Secretary A. J. Breitenstein of the Western Montana Association of Commercial Clubs carefully compiled from authentic sources statistics for the year 1911 of the principal crops produced in the Bitter Root valley, Missoula valley, Plains valley, the Flathead reservation, and the Blackfoot valley and also of livestock and fruits. These statistics relate to production in Ravalli, Missoula, parts of Sanders, Powell, and Granite counties, and do not embrace Flathead and Lincoln counties which are in Western Montana. If similar information from all other counties were available the insufficiency of the government's report of grain production in the state would be apparent.

WESTERN MONTANA PRODUCTS IN 1911.

Product.	Bitter Root Valley.....	Missoula Valley.....	Plains Valley.....	Flathead Reservation..	Flint Creek Valley.....	Blackfoot Valley.....	Total .....
Wheat—Bushels	1,203,610	154,086	95,010	528,588	122,904	75,286	2,179,484
Oats—Bushels	353,368	87,412	41,132	376,416	106,496	120,772	1,083,590
Barley—Bushels	129,086	11,200	11,680	34,960	13,640	14,080	214,646
Rye—Bushels	98,613	8,400	8,760	7,040	10,230	10,560	143,603
Hay—Tons	24,571	4,179	2,533	8,891	22,425	43,425	106,024
Cattle—Head	7,716	1,269	1,912	3,930	12,129	24,461	51,417
Sheep—Head	20,480	567	16	984	12,611	36,020	70,687
Hogs—Head	2,497	288	137	611	372	463	4,368
Horses—Head	6,771	1,018	1,074	2,897	3,886	2,318	17,964
1	2	3	4	5	6	7	8
Corn—Bushels	.....	.....	5,000	.....	.....	.....	5,000
Straw—Tons	20,000	.....	1,000	.....	.....	7,000	28,000
Potatoes—Lbs.	1,600,000	168,790	300,000	300,000	170,910	1,500,000	4,039,700
Turnips—Lbs.	.....	15,000	5,000	10,000	12,160	200,000	242,160
Onions—Lbs.	300,000	41,180	50,000	5,000	32,000	5,000	383,180
Other Vegetables ..	200,000	60,000	200,000	10,000	50,000	50,000	570,000
Fruits	* 450	.....	† 10	‡ 1,000	.....	a 590	.....
Cabbage	.....	.....	.....	.....	.....	.....	b 200,000
Celery	.....	.....	.....	.....	.....	.....	b 150,000
Butter Fat	.....	.....	.....	.....	.....	.....	b 50,000

*Cars.
†Cars.
‡Boxes.

aCrates.
bPounds.

Mr. W. E. Pierce of the Rocky Mountain Elevator Company of Great Falls estimated the wheat crop of the counties named for 1912 as follows: Cascade County, 875,000 bushels; Teton County, 1,200,000 bushels; Chouteau County, 750,000 bushels; Fergus County, 4,500,000 bushels; and Meagher County, 625,000 bushels; or 7,950,000 bushels for the five counties. His estimate for the whole state is a production of 16,875,000 bushels of wheat which allows only for a production of 8,925,000 bushels in the twenty-six counties not named by him which include such great wheat growing counties as Gallatin, Dawson, Valley, Flathead and Missoula. With less than one-fifteenth of its farm lands in cultivation Montana is surpassed in the amount of wheat production

by only ten states; in 1902 one territory and twenty-eight states each produced more wheat than Montana. By 1922 Montana should be producing more wheat than any state in the Union. The production of flaxseed has increased from 112,500 bushels in 1902 to 5,520,000 bushels in 1912; Montana takes second place among the states in the amount produced and is exceded only by one state, Wisconsin, which has less than one-fortieth of the acreage, in the average yield per acre.

The estimated acreage planted to winter wheat in the fall of 1912 was 557,000 and the condition, December 1, 1912, was 95.

MONTANA CROP STATISTICS FOR THE YEARS 1903 TO 1912.

Wheat.

Year.	Acres.	Bushels.	Value.
1903	98,735	2,784,327	$1,837,656
1904	108,608	2,596,731	2,311,091
1905	119,469	2,843,326	2,018,787
1906	137,389	3,297,336	2,110,295
1907	139,000	4,003 000	3,243,000
1908	153,000	3,703,000	3,185,000
1909	350,000	10,764,000	9,364,000
1910	480,000	10,560,000	9,081,000
1911	429,000	12,299,000	9,740,000
1912	803,000	19,346,000	12,381,000

Oats.

Year.	Acres.	Bushels.	Value.
1903	162,337	7,532,437	$2,636,353
1904	167,207	6,303,704	2,899,704
1905	178,911	7,389,024	3,177,280
1906	196,802	8,501,846	3,740,812
1907	240,000	11,760,000	5,410,000
1908	254,000	10,566,000	5,177,000
1909	300,000	15,390,000	6,464,000
1910	350,000	13,000,000	6,118,000
1911	425,000	21,165,000	8,466,000
1912	476,000	22,848,000	7,997,000

Barley.

Year.	Acres.	Bushels.	Value.
1903	18,231	732,886	$ 425,074
1904	17,502	523,310	324,452
1905	15,227	502,491	281,395
1906	14,313	472,329	264,504
1907	17,000	646,000	400,000
1908	25,000	875,000	534,000
1909	50,000	1,900,000	1,197,000
1910	52,000	1,456,000	903,000
1911	31,000	1,070,000	728,000
1912	39,000	1,424,000	755,000

Rye.

Year.	Acres.	Bushels.	Value.
1903	1,890	46,494	$ 29,291
1904	1,871	37,233	28,669
1905	1,871	37,420	24,323
1906	2,021	41,430	27,344
1907	2,100	47,000	32,000
1908	2,000	40,000	27,000
1909	2,000	58,000	44,000
1910	4,000	80,000	54,000
1911	8,000	184,000	132,000
1912	10,000	235,000	141,000

Potatoes.

Year.	Acres.	Bushels.	Value.
1903	12,904	2,271,104	$ 999,286
1904	13,162	1,882,166	1,148,121
1905	13,688	1,642,500	969,110
1906	14,099	2,143,048	1,307,459
1907	18,000	2,700,000	1,350,000
1908	20,000	2,760,000	1,932,000
1909	25,000	4,500,000	2,295,000
1910	25,000	3,000,000	2,555,000
1911	27,000	4,050,000	2,977,000
1912	37,000	6,105,000	2,244,000

Corn.

Year.	Acres.	Bushels.	Value.
1903	3,788	91,291	$ 56,600
1904	3,902	86,624	58,904
1905	3,941	76,451	51,989
1906	3,980	93,132	60,536
1907	4,000	90,000	61,000
1908	4,000	94,000	85,000
1909	5,000	175,000	150,000
1910	8,000	185,000	175,000
1911	20,000	530,000	424,000
1912	24,000	612,000	428,000

Flaxseed.

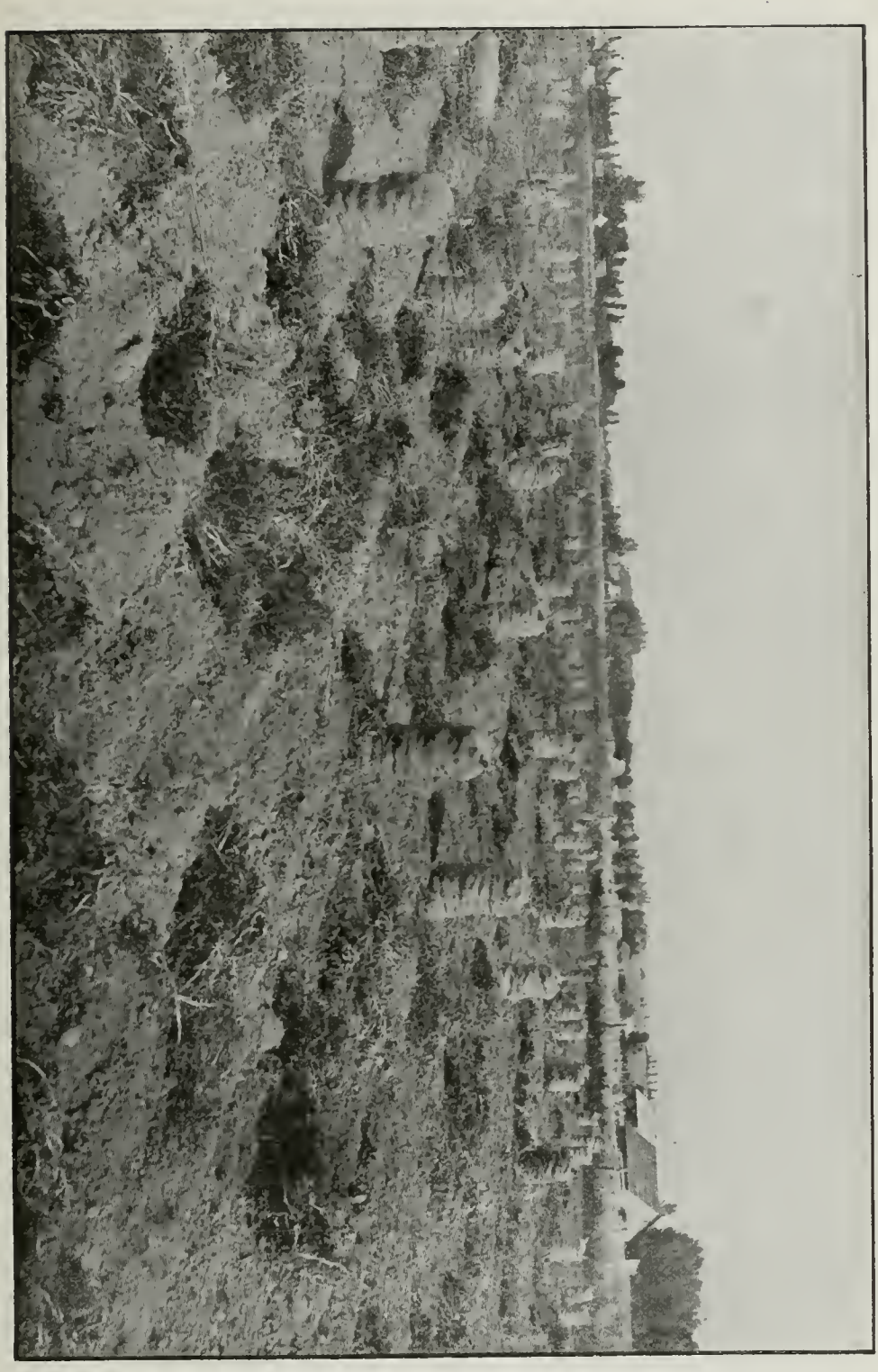
Year.	Acres.	Bushels.	Value.
1908	9,000	104,000	$ 104,000
1909	10,000	120,000	192,000
1910	60,000	420,000	1,008,000
1911	425,000	3,272,000	5,890,000
1912	460,000	5,520,000	6,182,000

Hay.

Year.	Acres.	Tons.	Value.
1903	335,558	697,961	$6,149,036
1904	348,980	670,042	5,829,365
1905	362,939	580,702	4,471,405
1906	373,827	691,580	6,155,062
1907	500,000	850,000	8,075,000
1908	525,000	1,050,000	8,768,000
1909	556,000	995,000	9,950,000
1910	600,000	840,000	10,500,000
1911	612,000	1,224,000	12,240,000
1912	640,000	1,216,000	10,093,000

FARM VALUE OF 160 ACRES OF CROPS IN THE STATES NAMED FOR THE YEAR 1912.

State.	Wheat.	Oats.	Barley.	Flaxseed.	Potatoes.
Minnesota	$1,809.60	$1,734.40	$1,849.60	$1,958.40	$6,048.00
North Dakota..	1,986.20	1,457.60	1,675.20	1,769.60	5,734.40
South Dakota..	1,568.00	1,352.00	1,747.20	1,555.20	6,048.00
United States..	1,932.80	1,748.80	2,398.40	1,798.40	9,163.20
Montana	2,467.20	2,688.00	3,094.40	2,150.40	10,560.00



Potatoes—700 Bushels to the Acre.

AVERAGE YIELD PER ACRE OF WHEAT IN THE UNITED STATES AND IN MONTANA, 1903 to 1912.

YEAR—	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912
Average of United States....	12.9	12.5	14.5	15.5	14.0	14.0	15.8	13.9	12.5	15.9
Average of Montana	28.2	23.9	23.8	24.0	28.8	24.2	30.8	22.0	28.7	24.1

Ten year Average of the United States.....	14.16
Ten Year Average of Montana.....	25.85

AVERAGE FARM VALUE PER ACRE OF WHEAT IN THE UNITED STATES AND IN MONTANA, 1903 to 1912.

YEAR—	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912
Average of United States...	$ 8.96	$11.58	$10.83	$10.37	$12.26	$12.97	$15.62	$12.23	$10.92	$12.08
Average of Montana	18.61	21.28	16.90	15.36	23.33	20.82	26.75	18.92	22.10	15.42

Ten Year Average of the United States.....	11.78
Ten Year Average of Montana.....	19.95

AVERAGE YIELD PER ACRE OF OATS IN HEAT IN UNITED STATES AND IN MONTANA, 1903 to 1912.

YEAR—	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912
Average of United States....	28.4	32.1	34.0	31.2	23.7	25.0	30.3	31.9	24.4	37.4
Average of Montana.....	46.4	37.7	41.3	43.2	49.0	41.6	51.3	38.0	49.8	48.0

Ten Year Average of the United States.....	29.84
Ten Year Average of Montana.....	44.63

AVERAGE FARM VALUE PER ACRE OF OATS IN UNITED STATES AND IN MONTANA 1903 to 1912

YEAR—	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912
Average of United States...	$ 9.68	$10.05	$ 9.88	$ 9.89	$10.51	$11.78	$12.29	$10.90	$10.98	$10.93
Average of Mortana.....	16.24	17.34	17.76	19.01	22.54	20.38	21.55	17.48	19.92	16.80

Ten Year Average of the United States.....	10.69
Ten Year Average of Montana.....	18.90

AVERAGE YIELD PER ACRE OF BARLEY IN THE UNITED STATE AND IN MONTANA 1903 to 1912.

YEAR—	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912
Average of United States...	26.4	27.2	26.8	28.3	23.8	25.1	24.3	22.5	21.0	29.7
Average of Montana.....	40.2	29.9	33.0	33.0	38.0	35.0	38.0	28.0	34.5	36.5

Ten Year Average of the United States.....	25.51
Ten Year Average of Montana.....	34.61

AVERAGE FARM VALUE PER ACRE OF BARLEY IN THE UNITED STATES AND IN MONTANA.
1903 to 1912.

YEAR—	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912
Average of United States...	$12.05	$11.40	$10.80	$11.71	$15.86	$13.91	$13.40	$12.92	$18.25	$14.99
Average of Montana.....	23.32	18.51	18.48	18.48	23.53	21.56	23.94	17.37	23.30	19.34

Ten Year Average of the United States.....	13.53
Ten Year Average in Montana	20.78

AVERAGE YIELD PER ACRE OF RYE IN THE UNITED STATES AND IN MONTANA.
1903 to 1912.

YEAR—	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912
Average of United States....	15.4	15.2	16.5	16.7	16.4	16.4	16.1	16.3	15.6	16.8
Average of Montana.....	24.6	19.9	20.0	20.5	22.0	20.0	29.0	20.0	23.0	23.5

Ten Year Average of the United States.....	16.14
Ten Year Average of Montana.....	22.25

AVERAGE FARM VALUE PER ACRE OF RYE IN UNITED STATES AND IN MONTANA.
1903 to 1912.

YEAR—	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912
Average of United States..	$ 8.39	$10.46	$10.07	$ 9.83	$11.98	$12.04	$11.87	$11.76	$12.98	$11.14
Average of Montana.....	15.50	15.32	13.00	13.53	15.24	13.50	22.00	13.50	16.56	14.10

Ten Year Average of the United States.....	11.05
Ten Year Average of Montana.....	15.23

AVERAGE YIELD PER ACRE OF POTATOES IN UNITED STATES AND IN MONTANA.
1903 to 1912.

YEAR—	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912
Average of United States...	84.7	110.4	87.0	102.2	95.4	85.7	106.8	93.8	80.9	113.4
Average of Montana	176.0	143.0	120.0	152.0	150.0	138.0	180.0	120.0	150.0	165.0

Ten Year Average of the United States.....	96.03
Ten Year Average of Montana.....	149.40

AVERAGE FARM VALUE PER ACRE OF POTATOES IN THE UNITED STATES AND IN MONTANA.
1903 to 1912.

YEAR—	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912
Average of United States...	$51.99	$49.96	$53.67	$52.29	$58.86	$60.50	$58.59	$52.31	$64.74	$57.27
Average of Montana.....	77.44	87.23	70.80	92.72	75.00	96.60	91.80	102.00	111.00	66.00

Ten Year Average of the United States.....	56.02
Ten Year Average of Montana.....	87.06

AVERAGE YIELD PER ACRE OF HAY IN THE UNITED STATES AND IN MONTANA.
1903 to 1912.

YEAR—	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912
Average of United States....	1.54	1.52	1.54	1.35	1.45	1.52	1.42	1.33	1.10	1.47
Average of Montana.....	2.08	1.92	1.60	1.85	1.70	2.00	1.79	1.40	2.00	1.90

Ten Year Average of the United States.....	1.42
Ten Year Average of Montana.....	1.82

AVERAGE FARM VALUE PER ACRE OF HAY IN THE UNITED STATES AND IN MONTANA, 1903 to 1912.

YEAR—	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912
Average of United States..	$13.93	$13.23	$13.11	$13.95	$16.89	$13.67	$15.07	$12.26	$16.10	$17.33
Average of Montana.....	18.32	16.70	12.32	16.46	16.15	16.70	17.90	12.50	20.00	15.77

Ten Year Average of the United States.....	14.55
Ten Year Average of Montana.....	16.28

CROPS OF 1911 AND 1912.

CROP.	Acreage.		Increase per cent.	Products in Bushels.		Increase per cent.	Value. Dollars.		Increase per cent.
	1912.	1911.		1912.	1911.		1912.	1911.	
Wheat	803,000	429,000	87	19,346,000	12,299,000	57	12,381,000	9,470,000	.27
Oats	476,000	425,000	12	22,848,000	21,165,000	08	7,997,000	8,466,000	.05*
Barley	39,000	31,000	26	1,424,000	1,070,000	33	755,000	728,000	.04
Rye	10,000	8,000	25	235,000	184,000	28	141,000	132,000	.07
Corn	24,000	20,000	20	612,000	530,000	16	428,000	424,000	.01
Flaxseed ...	460,000	425,000	08	5,520,000	3,272,000	68	6,182,000	5,890,000	.05
Potatoes ...	37,000	27,000	37	6,105,000	4,050,000	50	2,442,000	2,997,000	.19*
Hay	640,000	605,000	06	1,216,000**	1,210,000**	005	10,093,000	12,100,000	.17*
Total	2,489,000	1,970,000		56,090,000	42,570,000		40,419,000	40,207,000	

*Decrease.
**Tons.

Non-irrigated Garden. (Burnett Ranch—Eastern Fergus County.)

CENSUS REPORT OF VALUE OF ALL CROPS AND PRINCIPAL CLASSES THEREOF.

COUNTY.	Cereals.	Other Grains and Seeds.	Hay and Forage.	Vegetables.	Fruits.	All Other Crops.	Totals.
Beaverhead	$ 414,339.00	$ 557.00	$ 1,080,093.00	$ 33,622.00	$ 814.00	$ 205.00	$ 1,529,850.00
Broadwater	234,249.00	3,699.00	297,028.00	37,584.00	11,830.00	3,262.00	590,652.00
Carbon	555,071.00	14,587.00	633,166.00	146,953.00	43,690.00	252,423.00	1,645,890.00
Cascade	984,535.00	2,053.00	717,477.00	122,531.00	1,179.00	12,857.00	1,840,632.00
Chouteau	442,859.00	7,753.00	985,618.00	92,593.00	306.00	6,543.00	1,535,672.00
Custer	365,744.00	148,688.00	451,734.00	85,801.00	722.00	3,550.00	1,056,239.00
Dawson	782,861.00	273,791.00	236,692.00	98,550.00	127.00	730.00	1,392,751.00
Deer Lodge	21,062.00	65.00	163,408.00	63,745.00	487.00	6,384.00	255,151.00
Fergus	1,661,455.00	13,927.00	762,894.00	128,774.00	2,720.00	27,921.00	2,597,691.00
Flathead	861,227.00	387.00	378,453.00	140,459.00	100,239.00	173,742.00	1,654,507.00
Gallatin	2,001,037.00	3,414.00	629,449.00	97,899.00	19,195.00	39,360.00	2,790,354.00
Granite	126,267.00	.....	274,759.00	26,105.00	1,868.00	12,817.00	441,816.00
Jefferson	56,992.00	1,798.00	234,751.00	45,330.00	4,415.00	2,488.00	345,774.00
Lewis and Clark	172,938.00	7,994.00	412,985.00	75,581.00	2,911.00	70,978.00	743,387.00
Lincoln	46,680.00	606.00	80,615.00	30,464.00	8,692.00	40,457.00	207,514.00
Madison	385,574.00	6,080.00	661,229.00	133,093.00	17,933.00	6,972.00	1,210,881.00
Meagher	103,910.00	3,469.00	435,501.00	22,782.00	187.00	5,891.00	571,740.00
Missoula	384,510.00	327.00	335,260.00	83,118.00	99,180.00	98,607.00	1,001,002.00
Park	326,760.00	3,616.00	481,328.00	69,415.00	4,581.00	41,763.00	927,406.00
Powell	149,611.00	2,017.00	471,482.00	52,830.00	2,639.00	41,222.00	719,831.00
Ravalli	503,610.00	10,794.00	533,190.00	162,491.00	316,076.00	$1,030.00	1,607,191.00
Rosebud	142,299.00	50,608.00	314,208.00	73,614.00	741.00	6,169.00	587,639.00
Sanders	89,463.00	57.00	97,565.00	26,301.00	20,315.00	48,873.00	282,574.00
Silver Bow	11,802.00	.....	120,306.00	17,568.00	110.00	26,144.00	175,930.00
Sweet Grass	159,224.00	1,350.00	430,651.00	49,464.00	5,480.00	9,917.00	656,086.00
Teton	309,101.00	1,316.00	229,617.00	33,443.00	120.00	500.00	574,097.00
Valley	573,383.00	250,983.00	318,336.00	69,978.00	5.00	1,986.00	1,214,671.00
Yellowstone	384,642.00	10,110.00	576,811.00	207,648.00	26,116.00	352,328.00	1,557,655.00
Totals	$12,251,345.00	$820,076.00	$12,314,606.00	$2,227,736.00	$695,681.00	$1,375,119.00	$29,714,563.00

PRINCIPAL CROPS, PRODUCTION BY COUNTIES—1909.

	Corn, Bushels.	Oats, Bushels.	Wheat, Bushels.	Barley, Bushels.	Rye, Bushels.	Flaxseed, Bushels.	Potatoes, Bushels.	Hay and Forage, Tons.
THE STATE	274,103	13,805,735	6,251,945	753,268	111,214	447,484	3,240,696	1,692,656
Beaverhead	.....	792,144	20,101	4,865	1,680	.....	77,715	167,595
Broadwater	4,000	364,628	68,272	8,450	8,815	.....	55,652	42,398
Carbon	9,732	704,282	224,807	44,454	268	.....	168,003	104,288
Cascade	7,968	927,688	618,637	95,426	12,122	14	182,161	102,024
Chouteau	2,465	680,518	88,219	27,231	7,653	1,508	111,702	120,561
Custer	71,282	399,398	121,593	14,284	3,289	88,454	85,688	49,613
Dawson	78,488	916,009	404,436	43,092	843	171,413	98,466	38,615
Deer Lodge	.....	26,548	6,370	389	26	.....	88,924	51,441
Fergus	14,622	1,467,000	1,230,854	62,918	4,223	3,362	165,329	97,164
Flathead	1,235	795,721	604,733	56,404	1,718	.....	216,004	31,861
Gallatin	9,185	1,735,672	1,234,926	160,622	14,913	.....	155,061	86,992
Granite	.....	131,964	48,337	8,453	3,585	.....	37,370	34,710
Jefferson	.....	60,156	20,672	2,665	6,329	.....	72,093	27,835
Lewis and Clark	525	244,299	38,467	10,935	9,450	150	157,553	57,688
Lincoln	17	32,228	35,703	4,712	520	.....	28,749	6,631
Madison	.....	566,529	119,830	18,155	320	170	257,751	94,331
Meagher	.....	160,124	20,998	5,838	1,242	1,658	32,228	62,863
Missoula	.....	353,588	220,630	20,198	5,125	.....	115,206	31,576
Park	835	501,548	118,553	24,822	6,729	.....	112,213	69,423
Powell	210	183,556	31,965	7,135	6,448	.....	82,234	75,900
Ravalli	5,003	811,219	180,304	29,154	7,655	.....	386,998	52,027
Rosebud	20,276	131,744	54,838	10,967	875	.....	74,757	41,906
Sanders	985	70,825	59,552	4,401	.....	.....	30,782	7,529
Silver Bow	.....	19,644	1,811	1,143	747	.....	6,903	10,791
Sweet Grass	790	281,339	26,143	16,392	4,631	24	60,222	71,268
Teton	.....	278,638	194,656	10,455	565	600	25,667	34,882
Valley	22,610	705,075	302,861	47,333	965	178,853	62,973	53,637
Yellowstone	23,845	463,651	153,077	12,375	478	1,278	292,232	94,107

Compiled from 13th Census.

ACREAGE OF PRINCIPAL CROPS, BY COUNTIES—1909.

	Corn.	Oats.	Wheat.	Barley.	Rye.	Flaxseed.	Potatoes.	Hay and Forage.
THE STATE	9,511	333,195	258,377	27,242	6,034	37,647	20,710	1,135,376
Beaverhead	.....	15,255	763	225	96	.....	408	148,096
Broadwater	75	8,417	2,896	383	528	.....	263	23,632
Carbon	311	18,816	8,430	1,656	11	.....	925	42,388
Cascade	199	22,841	25,875	3,133	643	1	1,145	69,816
Chouteau	79	16,858	3,478	1,153	336	187	732	80,821
Custer	2,755	11,183	5,747	726	155	6,450	956	41,784
Dawson	2,762	25,547	19,331	1,493	51	13,553	821	45,704
Deer Lodge	.....	722	289	35	2	.....	593	17,644
Fergus	397	33,536	47,328	1,854	206	240	896	63,328
Flathead	40	17,909	23,491	1,717	74	....	1,613	26,053
Gallatin	180	37,676	47,186	4,884	764	....	879	46,769
Granite	.....	2,698	1,590	303	171	....	147	21,888
Jefferson	.....	1,871	952	155	311	....	378	19,816
Lewis and Clark	11	6,069	1,736	515	512	5	837	36,678
Lincoln	.....	1,058	2,699	246	46	....	277	4,536
Madison	... ..	13,389	4,817	799	17	31	1,241	58,783
Meagher	.....	4,536	1,009	240	72	80	202	53,830
Missoula	... ..	9,143	9,553	723	341	.....	638	18,970
Park	21	10,933	5,048	849	369	.....	797	38,640
Powell	6	4,444	1,189	267	324	.....	448	47,263
Ravalli	101	14,317	6,558	1,434	590	.....	2,327	29,967
Rosebud	754	4,522	3,512	667	28	.....	722	27,359
Sanders	36	1,746	1,785	150	.....	.....	230	4,386
Silver Bow	.....	439	90	37	57	.....	62	7,428
Sweet Grass	20	7,625	1,096	624	249	2	295	32,814
Teton	.....	7,175	8,286	321	22	35	197	34,125
Valley	815	18,879	15,108	1,752	28	16,895	615	57,057
Yellowstone	952	15,591	8,535	901	31	168	2,066	35,801

Compiled from 13th Census.

NUMBER AND AREA OF FARMS AND LANDS IRRIGATED.

	No. of Farms in 1910.	No. of Farms Irrigated in 1909.	Approximate Land Area, Acres.	Land in Farms, Acres.	Improved Land in Farms, Acres.	Acreage Irrigated in 1909.	Per Cent of Total Land Area.	Per Cent of Land in Farms.
Beaverhead	536	480	3,020,160	461,315	275,530	221,716	7.3	48.1
Broadwater	399	231	764,160	183,887	58,777	39,612	5.2	21.5
Carbon	1,264	912	1,560,320	286,449	120,409	121,174	7.8	42.3
Cascade	1,502	194	2,165,760	1,001,534	220,340	25,063	1.2	2.5
Chouteau	1,818	254	10,222,080	1,000,621	247,930	110,291	1.1	11.0
Custer	1,622	129	8,419,840	931,581	124,667	19,399	0.2	2.1
Dawson	1,947	100	8,467,840	607,078	183,163	11,158	0.1	1.8
Deer Lodge	171	170	479,360	70,994	28,452	29,881	6.2	42.1
Fergus	2,310	121	5,809,920	1,201,831	387,000	48,232	0.8	4.0
Flathead	1,189	63	3,884,800	239,445	105,679	14,527	0.4	6.1
Gallatin	1,260	802	1,608,320	531,902	279,908	127,449	7.9	24.0
Granite	295	175	1,047,680	134,807	43,669	24,107	2.3	17.9
Jefferson	301	188	1,056,000	124,437	37,757	23,314	2.2	18.7
Lewis and Clark	529	295	2,217,600	494,278	78,441	38,391	1.7	7.8
Lincoln	298	54	2,259,200	64,056	15,090	2,105	0.1	3.3
Madison	730	592	2,931,840	421,271	140,100	102,179	3.5	24.3
Meagher	400	176	2,410,240	710,332	119,746	102,090	4.2	14.4
Missoula	670	333	2,715,520	185,294	73,985	42,689	1.6	23.0
Park	730	463	1,712,000	523,317	110,902	78,722	4.6	15.0
Powell	377	278	1,637,760	370,984	69,350	51,373	3.1	13.8
Ravalli	1,055	975	1,566,080	209,266	106,693	93,441	6.0	44.7
Rosebud	961	179	6,184,320	900,819	53,867	33,271	0.5	3.7
Sanders	211	62	1,829,760	55,917	12,421	3,101	0.2	5.5
Silver Bow	230	84	446,720	54,592	16,547	7,385	1.7	13.5
Sweet Grass	473	332	1,867,520	457,715	107,563	58,963	3.2	12.9
Teton	1,187	179	4,851,840	530,714	217,052	99,711	2.1	18.8
Valley	1,946	179	8,649,600	576,130	165,043	52,320	0.6	9.1
Yellowstone	1,812	800	3,666,560	1,215,046	240,288	97,420	2.7	8.0
State	26,214	8,970	93,568,640	13,545,603	3,640,309	1,679,084	1.8	12.4

PRIZES WON BY MONTANA EXHIBITS.

Agricultural exhibits from Montana win prizes in competition with the world whenever and wherever shown. During years 1911 and 1912 the record of former years was maintained.

At the Dry Farming Congress of 1911 held at Colorado Springs the gold medal for the best potatoes was awarded to H. E. Murphy, of Wibaux, Dawson County, and to John Forster, of Grey Cliff, Sweet Grass County, was awarded the gold medal for the best hulled barley and the gold medal for the best hulless barley.

MONTANA AT THE NEW YORK LAND SHOW.

The superior quality of the products of Montana farms was established by the exhibits at the New York Land Show held in Madison Square Garden in November, 1911. The numerous and splendid exhibits were carefully judged; and when the coveted prizes for wheat, oats, barley, and alfalfa were awarded to Montana exhibitors many who read of this triumph heard for the first time that a new agricultural star had arisen in the West. The awards, which gratified but did not surprise the citizens of the state, were as follows:

The Best Wheat in the United States.

The $1,000 silver cup, donated by James J. Hill of the Great Northern Railway "for the best one hundred pounds of wheat grown in the United States in 1911" was awarded to James Todd of Geyser, Cascade County, Montana. Mr. Todd's exhibit consisted of one hundred pounds of Turkey Red winter wheat that was grown without irrigation. It was part of a yield of 75 bushels grown on an acre and weighed 65 pounds to the bushel.

The Best Oats in the United States.

The $1,000 silver cup donated by A. J. Earling, president of the Chicago, Milwaukee & St. Paul Railway, for "the best one hundred pounds of oats raised in the United States in 1911" was awarded to Hartman and Patton of Bozeman, Gallatin County, Montana. The oats entered by T. Menard of the same county were found to be the next best.

The Best Barley in the United States.

The $1,500 silver cup donated by Colonel Gustav Pabst of Milwaukee for "the best bushel of barley grown in the United States in 1911" was awarded to R. Eisinga of Manhattan, Gallatin County, Montana.

The Best Alfalfa in the United States.

The $1,000 silver cup donated by Paul L. Van Cleve to be awarded "to the person demonstrating the best and widest uses of alfalfa as food for man and beast who shall also exhibit at this exposition alfalfa meal or flour and bread and other products made therefrom," was awarded to Dr. W. X. Sudduth of Broadview, Yellowstone County, Montana.

MONTANA AT THE ST. PAUL LAND SHOW.

At the Land Products Show, held at St. Paul, Minn., December 12 to 23, 1911, under the auspices of the Northwestern Development League, there were exhibited the best collection of land products from the states of

Gallatin County Grain Field.

Minnesota, North Dakota, South Dakota, Montana, Idaho, Oregon and Washington that were ever assembled together. Competition for most of the prizes was limited to states and districts and for some to two states; but the great prizes of the show, "for best state exhibit" and for "best bushel of winter wheat grown in the American Northwest" were open to all states. The following prizes were awarded to exhibits from Montana:

The Largest and Best Exhibit.

The elegant cup offered by L. W. Hill for "the largest and best exhibit of products from any one state," to the State of Montana. This exhibit was collected, entered and exhibited by J. H. Hall, Commissioner of the Bureau of Agriculture, Labor, Industry and Publicity, who received the cup as the representative of the State of Montana.

The Best Winter Wheat.

The beautiful cup offered by the O'Donnell Shoe Company for "the best bushel of winter wheat produced in the American Northwest" was awarded to Frank Smart of Bozeman, the wheat being a part of the Gallatin County exhibit.

The Best Barley.

The cup offered by the St. Paul Association of Commerce for the best sample of barley grown in North Dakota or Montana was awarded to John Klaver of Manhattan, Montana.

The Most Beautiful Booth.

The cup offered by W. A. Campbell for the "most beautiful, elaborate and attractive booth at the show" was won by the Judith Basin exhibit.

The Best Individual Potato Display.

The J. J. Hill cup for the best individual display of potatoes was awarded to Pat Carney of Waterloo, Madison County.

MINNEAPOLIS LAND SHOW OF 1912.

The great prize offered at the Minneapolis Land Show of 1912 was a traction engine of the value of $5,000 for the best five bushels of wheat grown in the American northwest and it was won by Nash and Bridgeman of Clyde Park, Park County, Montana. In the same competition Montana exhibits also took second, third and fourth places.

The scores of the ten leading competitors were as follows:

	Points
Nash & Bridgeman, Clyde Park, Mont.	92.1
Peter Deboer, Conrad, Mont	84.23
J. F. Kane, Conrad, Mont.	81.05
Dick Heun, Conrad, Mont.	80.08
J. V. Skarvold, Chrstine, N. D.	79.53
K. F. Ebner, Cando, N. D.	79.03
J. W. McNamara, Amanda, N. D.	75.52
Fred Pietz, Mott, N. D.	73.00
Frank Anderson, Heffner, Ore.	72.61
Josephine Connolly, Power, Mont.	67.8

Detailed scores of the first 10 follow:

Nash and Bridgman—Commercial, 92½; milling, 104.7; yield, 78.9; variety, Turkey red; acreage, 52; yield, per acre, 59 1-3 bushels.

Peter Deboer—Commercial score, 94; milling, 105.5; yield, 53.2; variety, Scotch fife; acreage, 34; yield per acre, 40 bushels.

J. F. Kane—Commercial score, 96; milling, 104.6; yield, 42.56; variety, blue stem; acreage, 50; yield, per acre, 32 bushels.

Dick Heun—Commercial score, 89; milling, 108; yield, 43.25; variety, blue stem; acreage, 30; yield, per acre, 32½ bushels.

J. A. Skarvold—Commercial score, 93; milling, 105.7; yield, 39.9; variety, velvet chaff; acreage, 40; yield, per acre, 30 bushels.

K. F. Ebner—Commercial score, 92; milling, 105.2; yield, 39.9; variety, Haines' blue stem; acreage, 100; yield, per acre, 30 bushels.

J. W. McNamara—Commercial score, 87; milling, 106; yield, 33:58; variety, blue stem; acreage, 80; yield, per acre, 25¼ bushels.

Fred Pietz—Commercial score, 98; milling, 99.4; yield, 21.61; variety, blue stem; acreage, 34; yield, per acre, 16¼ bushels.

Frank Anderson—Commercial score, 81; milling, 95.6; yield, 41.23; variety, forty fold; acreage, 220; yield, per acre, 31 bushels.

Miss Josephne Connolly—Commercial score, 88; milling, 95.5; yeld, 19.95; variety, Scotch fife; acreage, 50; yield, per acre, 15 bushels.

The Nash and Bridgeman entry was five bushels of Turkey red wheat which weighed a few ounces over 60 pounds to the bushel and was grown on unirrigated land. A dispatch from Minneapolis to the Anaconda Standard described the judging as follows:

Inspectors who grade and pass on millions of bushels of wheat on the Minneapolis market looked over entry "No. 24" along with 50 or 60 others. They cut "No. 24" one point on color; a half point on purity; three points because it had damaged kernels, and then three points because there was a trace of smut. That left the commercial score 92½, and there were some others higher.

Then the Howard wheat and flour testing laboratory, which has been making tests for the mills of Minneapolis for a quarter of a century, took all the samples submitted by the judges and ground them into flour. From this flour they baked big loaves of bread, most of them "better than perfect."

This test showed the relative percentage values for milling into bread as compared with average No. 2 northern spring, which for the purpose of camparison, is taken as testing 100 points. Thus many of the samples submitted to the laboratory scored more than 100 points and were actually several points better than No. 2 northern spring for milling purposes.

The sample of Nash & Bridgman scored 104.7. The laboratory found the prize winning wheat contained but 12 per cent, moisture. It had a cleaning loss of only one-half of 1 per cent., and a net flour yield of 76.6 per cent. The No. 2 northern spring, to which it was compared, has an average of 13 per cent. moisture and a flour yield of 72 per cent.

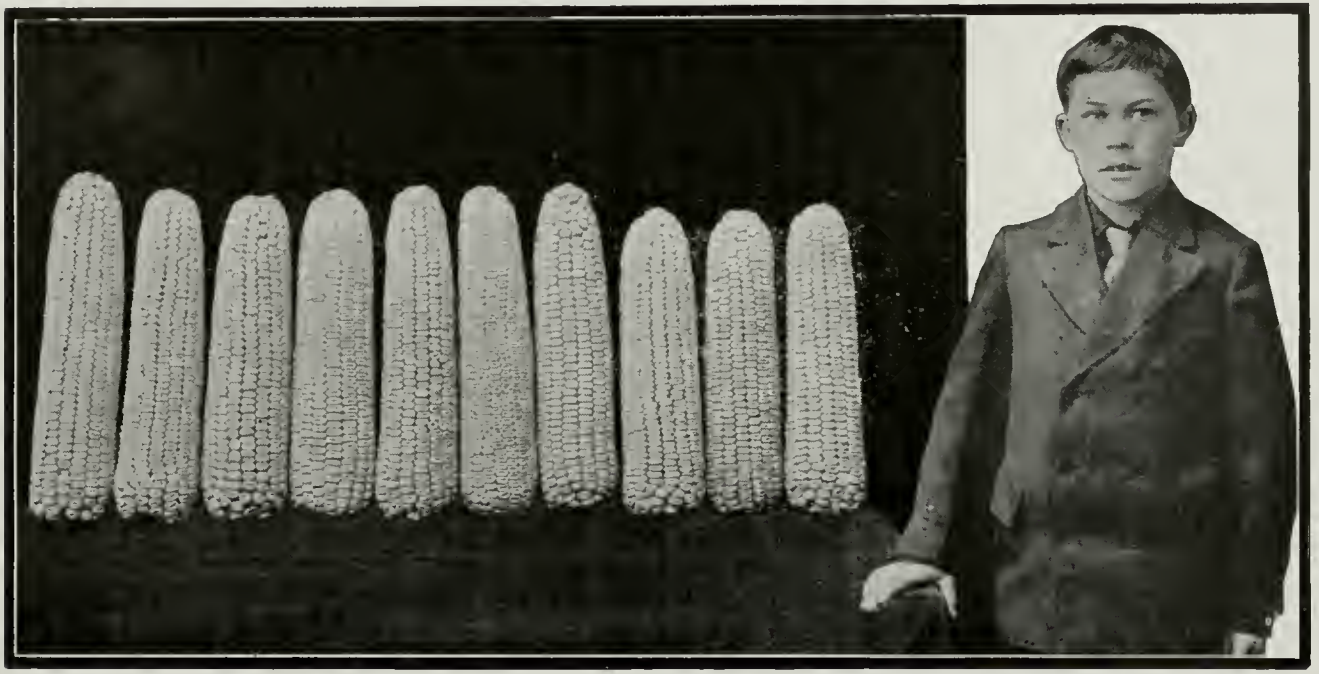
Twelve ounces of flour made from the Nash & Bridgeman Turkey red produced a loaf of bread containing 168 cubic inches and weighed 18.25 ounces when it came from the oven.

This gave the Park county ranchers 92½ points on the commercial score card and 104.7 on the milling test.

These are high scores, but it was in the yield per acre that the Montanans excelled more decisively.

The exhibitor showing highest yield lost out completely in the milling test and commercial scoring, but he set the pace on yield with 75 bushels to the acre. This was considered as a 100 per cent. yield. Nash & Bridgeman, therefore, earned 78.9 points on their yield of 59 1-3 bushels to the acre. This made their final score 92.1 and their nearest competitor was Peter Deboer of Conrad, Mont., with a final score of 84.2.

Joseph P. Nash, who went to Minneapolis to receive the prize, in an interview published in the Bozeman Chronicle described the methods of



Ignatius O'Donnell, the Billings, Montana, Boy, and his Corn. Won the first prize in the James J. Hill corn-growing contest, at which $1,000 in prizes were given away. The exhibits showed that corn could be grown all over the state at altitudes under 4,000 feet.

farming he followed to produce the best wheat grown in the United States in 1912. Mr. Nash said:

"The five bushels which won the prize were grown at an altitude of 4,900 feet, where the rainfall does not exceed 17 to 18 inches. One crop had been produced on the land before we seeded it to this Turkey Red wheat, the seed for which came from the Gallatin valley," said Nash.

"We summer fallowed the land in 1911 by plowing with a moldboard plow not less than six inches deep in the last part of May and first of June. We dragged it down as soon as possible after plowing, the idea being to preserve the moisture by dragging within two days after plowing or sooner. After any rainfall of consequence the ground was dragged as soon as it was possible to get onto it with a team.

"About the first of July we double disced the field. The last of August and first week of September it was dragged, and then the seed was planted by drilling with a double disc Kentucky drill, which put it down at least four inches. Forty pounds of seed was used to the acre, and we prefer less rather than more than this amount. If the land is strong and clean it will not require this amount.

"With such methods of farming moisture is preserved sufficient to start the seed to germinate immediately whether there is rain or not.

"In the spring of 1912 the field was harrowed or dragged as soon as the land was dry enough to permit it. Once or twice later we dragged it. This is done to keep a mulch on the land and keep it from baking or drying out.

"The soil of our ranch is a dark mountain loam, beneath which is a limestone clay subsoil. The wheat was produced without any artificial means or sub-irrigation, though we have considerable winter snow, which helps preserve the wheat through the winter.

"Wheat in this section seldom or never winter kills and never heaves out by frost. The character of the soil is similar to that in all of central Montana, particularly in the Judith basin, the Crow creek, Smith river and Musselshell valleys. There are hundreds of acres of similar land open to homestead entry in Montana."

A wonderful yield of flax is reported by the Conrad Independent, which says that I. J. Corry threshed in 1912 thirty-one and a quarter bushels of flax per acre from an 80 acre field on his farm six miles from Conrad. For the same year the record yields of potatoes on unirrigated land is claimed for O. D. Benson of Flathead County, whose crop produced an average yield of 466 bushels per acre.

LIVESTOCK.

At the International Livestock Show held at Chicago in December, 1912, Montana cattle owned by G. J. Allen of Livingston, Park County, won eight prizes in the carload division. A dispatch to the Butte Miner said:

In the champions by ages division Mr. Allen's two-year-olds captured first prize and his yearlings were awarded second honors. In their different classes his two-year-olds and yearlings both carried away first honors. Another load of his Hereford yearlings were awarded third prize and his Hereford calves took the blue ribbon without much trouble. Though competing with the best in the land, Mr. Allen's Hereford specials were easy winners. Both his two-year-olds and his calves were placed first in their classes.

A Montana steer raised by the Jones Land and Cattle Company of Wisdom, Beaverhead County, Montana, won the grand championship at the Northwest Livestock Show held at Lewiston, Idaho, and was sold December 13, 1912, at $1.05 a pound. The steer was a pure-bred Hereford.

14 months old, weighed 1,275 pounds, and sold for $1,338.75, the world's record price for a steer. The second prize in the champion steer class was awarded to the Canfield Ranch Company of Beaverhead County, Montana.

CROP YIELDS AND LAND VALUES IN MONTANA.

(By F. S. Cooley, Superintendent Montana Farmers' Institutes.)

About October 20, 1912, a questionaire was sent out from the Montana Farmers' Institute office to about one hundred farmers in various parts of the state for the purpose of securing reliable information in regard to crop yields and land values to pass along to people seeking such information. It was the aim to secure examples of fairly representative yields rather than of the big crops and also a statement representing prices for which land of like quality similarly situated can be bought at the present time. The accompanying statements are taken from the replies sent in.

From a study of agricultural conditions extending over several years and all parts of the state, and from personal acquaintances with these men and their work, I believe these statements to be reliable and fair and that they accurately represent Montana crops and lands. Phenomenal yields are often secured under the best conditions of land and management. While statements of such yields are mostly true, the reports herein presented are a safer guide to the inquirer about Montana and are less likely to cause disappointment.

* Indicates values of lands not reported but estimated by F. S. Cooley.

1. Fairview (lower Yellowstone valley), Dawson County: Eighty acres spring wheat, 20 bu. per acre; 60 acres oats, 50 bu. per acre. Irrigated land worth $40 per acre. Good dry land, producing 20 bu. wheat per acre, $15.—A. D. Morrill.

2. Boomfield, Dawson County: Fourteen acres spring wheat, 27 bu. per acre; flax, 20 bu. per acre. Dry land worth $25 to $30.—Lester I. Brown.

3. Armington, Cascade County: Twenty acres fall wheat, 30 bu. per acre; 20 acres oats, 50 bu. per acre; 4 acres potatoes, 200 bu. per acre. Irrigated land worth $100 an acre; dry land $30.—W. V. Talbot.

4. Briston (Big Hole Basin), Beaverhead County: Frost killed fall wheat; natural hay country; 6,500 feet altitude. Irrigated land worth $12 to $20 an acre.—W. A. Armitage.

5. Conrad, Teton County: Fifty acres fall wheat, 52 bu. per acre (1911) · 110 acres barley, 45 bu. per acre; 80 acres flax, 16½ bu. per acre; one-half acre sugar beets, 10 tons per acre; 60 acres alfalfa, three cuttings. *Dry and irrigated land worth $30 to $60 an acre.—J. M. Ryan.

Note.—These yields are probably above the average.—F. S. C.

6. Hardin (Big Horn Valley), Yellowstone County: One hundred and thirty acres fall wheat, 35 bu. per acre; 50 acres flax, 20 bu per acre; 80 acres corn, 60 bu. per acre; 100 acres alfalfa, three cuttings. *Dry and irrigated land worth $30 to $100 an acre.—A. L. Mitchell.

Note.—These yields are rather more than average.—F. S. C.

7. Sidney (Lower Yellowstone Valley), Dawson County: Ninety acres blue stem wheat, 32 bu. per acre. Dry land five miles out, worth $20 an acre.—Joseph Kelley.

8. Townsend, Broadwater County: Eight hundred and fifty acres fall wheat, 21 bu. per acre, dry land. Dry land worth $25 an acre. Oats, alfalfa and small grains grown extensively under irrigation. *Land values double or more those of dry land.—W. S. Thompson.

9. Belgrade, Gallatin County: Sixty acres Climax garden peas, 30 bu. per acre; 1 acre potatoes, 260 bu. per acre; 60 acres oats, 52 bu. per acre. Irrigated land worth $60 to $75.—Henry Harrer.

10. Fosyth, Rosebud County: Thirty acres fall wheat, 30 bu. per acre; 20 acres corn, 40 bu. per acre; 25 acres rye, 17½ bu. per acre. Dry land worth $30.—E. E. Fleming.

11. Hysham (Yellowstone Valley), Rosebud County: Twenty-six acres fall wheat, 35 bu. per acre; 60 acres sugar beets, 17 tons per acre; corn, afalfa and oats also grown successfully. Irrigated land $60 an acre. Dry land, $10 to $20.—J. W. Hershberger.

12. Billings, Yellowstone County: Twenty-five acres spring wheat, 42 bu. per acre; 150 acres oats, 75 bu. per acre; 25 acres sugar beets, 14 tons per acre; 100 acres alfalfa, 4 tons per acre. Land is irrigated and worth $125 to $150 an acre.—Jas. Scilley.

13. Columbus, Yellowstone County: Eight acres spring Club wheat, 28 bu. per acre; 24 acres Swedish Select oats, 50 bu. per acre; 22 acres Guy Mayle barley, 23 bu. per acre; 70 acres Canadian field peas, 31½ bu. per acre; 16 acres potatoes, 300 bu. per acre. Irrigated land worth $100 to $125 per acre.—James T. Annin.

14. Bozeman, Gallatin County: Four hundred and fifty acres Turkey Red fall wheat, 44 bu. per acre. Summer fallowed dry land 20 miles north of Bozeman, worth $80 an acre.—Whitefield Spain.

15. Wibaux, Dawson County: Fifty acres flax, 15 bu. per acre. Dry land three miles from town worth $35 an acre.—J. S. Meyer.

16. Custer County, twelve miles south of Wibaux: Forty acres spring wheat, 20 bu. per acre. Dry land worth $30 an acre.—W. C. Polen.

17. Wibaux, Dawson County: Two hundred and ten acres blue stem wheat, 24 bu. per acre; 100 acres flax, 16 bu. per acre. Dry land nine miles south of Wibaux worth $20 an acre.

18. Wibaux, Dawson County: Two hundred and fifty acres spring wheat, 28 bu. per acre. Dry land worth $50 to $60 an acre.—Jas. Lynn.

19. Rosebud, Rosebud County: Twelve hundred acres flax, 12 bu. per acre; fall wheat, 20 bu. per acre. Dry land worth $20 to $25 an acre.—A. W. Keenie.

20. Terry, Custer County: Two hundred and forty acres blue stem wheat, 15 bu. per acre; corn and alfalfa do well also. *Dry land worth $25 an acre.—Frank Shaw.

21. Victor (Bitter Root Valley), Ravalli County: Nine acres spring wheat, 30 bu. per acre; 12 acres oats 98½ bu. per acre; 9 acres barley, 50.3 bu. per acre; 25 acres alfalfa, 4 tons per acre. Irrigated land worth

$150 an acre. Fruit lands in Bitter Root Valley selling at higher prices.—Jas. Carruthers.

22. Culbertson, Valley County: Fifteen acres fall wheat, 35 bu. per acre; 70 acres spring wheat, 25 bu. per acre; 18 acres barley, 45 bu. per acre; — acres flax, 12 to 25 bu. per acre; — acres alfalfa, 3 tons per acre. Dry land worth $20 to $35 an acre.—Frank P. Miller.

23. Hall (Flint Valley), Granite County: Twenty-eight acres fall wheat, 42.17 bu. per acre; 15 acres oats, 58.3 bu. per acre; 28 acres clover and timothy, 2¾ tons per acre; 21 acres clover, 2½ tons per acre.—F. C. Pearson.

24. Pony, Madison County: Eighty-four acres fall wheat, 43.57 bu. per acre; 40 acres oats 70 bu. per acre; 7 acres potatoes, 192 bu. per acre; 39 acres alfalfa, 5 tons per acre. Have been offered $100 an acre for this land.—J. I. Wetzel.

25. Jeffers, Madison County: Forty acres fall wheat, 40 bu. per acre; 20 acres spring wheat, 35 bu. per acre; — acres oats, 65 bu per acre; — acres barley, 50 bu. per acre; — acres seed peas, 35 bu. per acre; — acres potatoes, 250 bu. per acre; — acres alfalfa, 4 tons per acre. Irrigated land 15 miles from railroad sells at $30 to $50 an acre.—F. A. Maynard.

26. Hingham, Hill County: Two thousand acres fall wheat, 24 bu. per acre; 2,500 acres spring wheat, 22 bu. per acre; 1,700 acres oats 40 bu. per acre; 500 acres barley, 35 bu. per acre; 8,000 acres flax, 13 bu. per acre. *Dry land worth $20 to $35 an acre.—Ben Hamilton.

27. Lo Lo (Bitter Root Valley), Missoula County: Spring wheat, 25 to 50 bu. per acre; oats, 60 to 80 bu. per acre; alfalfa, 4 to 5 tons per acre; potatoes, 250 bu. per acre; apples, corn, small fruits and garden truck flourish. Irrigated land worth $100 to $200 an acre. Dry land $25 to $50 an acre.—Frank Irwin.

28. Fort Benton, Chouteau County: Three hundred acres fall wheat, 25 bu. per acre; 25 acres spring wheat, 20 bu. per acre; 24 acres oats, 30 bu. per acre; 50 acres barley, 30 bu. per acre; 46 acres flax, 10 bu. per acre. All on new broken sod the first season. Dry land worth $20 to $30 an acre.—C. W. Vaughn (Nine Mile).

29. Creston, Flathead County: One hundred acres fall wheat 30 bu. per acre; 120 acres oats, 50 bu. per acre; 20 acres barley, 30 bu. per acre; 5 acres peas, 45 bu. per acre; 2 acres potatoes, 200 bu. per acre; — acres clover and alfalfa, 3½ tons per acre. Dry land worth $75 to $100 an acre.—H. Gatiss.

30. Corvallis (Bitter Root Valley), Ravalli County: Fall wheat on dry land land, 30 bu. per acre; spring wheat on dry land 30 bu. per acre; barley on dry land, 30 bu. per acre; peas on dry land, 30 bu. per acre; oats, irrigated, 60 bu. per acre; alfalfa, three cuttings, 4½ tons per acre; potatoes, irrigated, 200 bu. per acre. Dry land worth $50; irrigated land $150 to $200 an acre. Apples, strawberries and small fruits are very prolific.—Claud Hart.

31. Belt, Cascade County: Thirty-five acres fall wheat, 24 bu. per acre; 40 acres spring wheat, 17 bu. per acre; 20 acres oats, 42 bu. per acre; 1½ acres potatoes, 200 bu. per acre; 40 acres alfalfa, 1½ tons per acre. —R. H. Bemis.

32. Polson, Flathead County: Ninety acres fall wheat, 28 bu. per acre; 30 acres spring wheat, 17 bu. per acre; 40 acres oats, 46 bu. per acre.—D. E. Blair.

33. Stanford (Judith Basin), Fergus County: 2,780 acres Turkey Red fall wheat, 25 bu. per acre; 1,300 acres oats, 50 bu. per acre. *Dry land worth $35 to $50 an acre.—Frank Strouf.

Land values here depend greatly upon the factors of

1. Location.
2. Completeness of settlement of region.
3. Distance from railway and character of roads.
4. Whether irrigated or dry.
5. Altitude and kind of crops grown.
6. Percentage tillable.
7. General character of neighboring lands.

Prices are appreciating rapidly and seldom approach the intrinsic value, based on capacity to produce crops. Prices advance in direct ratio with rapidity of settlement.

Values and crop yields are not maximum statements, but approach general averages at the present time.

GRAIN INSPECTION AND GRADING.

Although only a small part of the farm lands have been put in cultivation the progress already made has resulted in the production of grain in great quantities, a large and yearly increasing proportion of which is sold at grain centers beyond the limits of the state. A widespread belief exists among Montana grain growers that wheat shipped from this state to Minneapolis, Duluth and other large grain markets is often given a lower grade than its quality justifies with the result that the producer is compelled to sell at a price, sometimes five cents or more per bushel, less than the wheat would sell for if it were justly graded. On the amount of wheat now annually shipped the loss due to improper grading aggregates a large sum and as the quantity of grain to be exported will increase at a large ratio every year, for the next ten years, at least, the loss to the grain growers of the state will soon equal many millions of dollars if the practice of grading Montana wheat too low is not stopped.

Several remedies have been suggested. One is that a state grain and warehouse commission be established under whose directions grains would be inspected and graded by an official of the State of Montana at the place of shipment or of sale. Another is based on the notion that it may be possible for Montana to enter into some arrangement by which it may secure representation on the Minnesota board of grain inspection. A third plan is for the inspection of grain by federal officers whose certificates would be accepted in all markets.

37,000 Bushels of Wheat.

As a preliminary step to establish beyond possibility of dispute the right of a large proportion of the Montana wheat that is shipped to the grain markets of the country to receive a higher grading and as a consequence a higher selling price a grain testing laboratory should be established at the Montana Agricultural Experiment Station.

A system of federal inspection of grain is provided for in the bill of Senator McCumber of North Dakota which is pending in Congress. The bill (223) to provide for the inspection and grading of grain entering into interstate commerce, and to secure uniformity in standards and classification of grain and for other purposes, was favorably reported by Senator Crawford of South Dakota from the Committee on Agriculture and Forestry accompanied by a report which adopted the report made upon a similar bill in the Sixtieth Congress as follows:

Full and complete hearings were had before the committee, and every question raiseu hy this proposed measure quite exhaustively considered. Many witnesses were heard, both for and against the measure.

Our grain trade has grown up from the rather ancient and simple system of barter between the producer and purchaser, upon personal inspection of the product, to the present almost universal system of contracts for vast quantities by grades in great central markets hundreds of miles from the place of production and in a different jurisdiction. The producer, for the most part, is without any voice in determining the rules or regulations governing the handling or grading of his grain, the price of which is fixed by such grading, and helpless to reform or eliminate the many abuses which have entered into the system of handling and grading grain at these great terminals, and which operate as a fraud and injustitce upon both the producer and consumer.

These evils, which have been established by both the positive evidence of witnesses and the record admissions of the boards of trade and State warehouse commissions, which for the most part govern the commerce in grain, may be epitomized as follows:

(1) Lack of uniformity in the grading of grain at the various terminal markets. A resolution adopted at Salina, Kans., January 15, 1907, by independent grain dealers succinctly presents the injustices resulting from this evil. The portion referred to reads as follows:

"To much can not be said and done in favor of a national inspection law. We have no uniform inspection of grain and cotton, the principal farm products which are so largely dealt in and which are of such great importance to both the producer and consumer. A shipper of grain can not send a car of wheat from one point to another with any degree of security at the present time, take all the precaution he may. A shipper at some point in Kansas may have a car of grain inspected at some point in the State as No. 2, send it to Missouri, where it is inspected by the Missouri State grain inspection department as No. 3; the same car of grain may be forwarded to Illinois and there inspected as No. 4, and from Illinois it may be sent to New Orleans and there inspected as 'no grade'; discounted from place to place anywhere from 1 to 15 cents per bushel, until it falls into the hands of the trust exporter, when it is again inspected as No. 2 and sold for No. 2 at No. 2 price, the difference falling into the hands of the trust instead of the farmer and producer."

The grain raised on a farm in Iowa may be shipped to three different points—Minneapolis, Chicago, and Kansas City. The rules of grading in Minneapolis for a certain grade of grain would require that it weigh a given number of pounds per measured bushel, contain a certain percentage of a particular kind of grain, possess a certain color, etc. The Chicago rule for determining the same grade will differ considerably from the Minneapolis standard, and the Kansas City standard will be

different from either of the others. Now, as the price of the grain is dependent solely upon the grade it receives, this same grain would have three different values placed upon it at these three different terminals. These divers systems open up an immense field for manipulation in grades, which always works to the detriment of the producer. Because of this lack of uniformity one shipment of grain may receive as many different grades as there are different markets through which it passes.

(2) Practically all grain passes through one or more great terminal markets before reaching the consumer. Its value is fixed by the grade that is placed upon it at such terminals. Under the present system, whether under State laws or board of trade rules, the parties in interest as purchasers at the great terminals dominate and control all rules governing the handling of grain, its inspection, and grading. That such rules should be in the interest of the terminal purchasers under such a system is not surprising.

(3) The appointment of inspectors and the fixing of grades are under the control of the boards of trade. The relation between the inspection and grading power and the purchasing interest is most close and intimate.

(4) Appeals from the decision of inspectors are almost invariably taken to a board of appeals composed of persons who are either directly or indirectly interested in the purchase of grain, from the inspection of which the appeal is taken.

(5) That the inspection and grading departments at these great terminals are subservient to and dominated by the great elevator interests is established beyond question.

(6) As a result of this domination and control has grown what is known as a system of rigid and easy inspection—that is, rigid inspection into the elevator and easy inspection out.

(7) This enables the terminal elevators to buy in the grain, generally at a grade less than its true grade, mix it with other inferior grain, and sell the same out at a grade higher than the true grade, thereby making the value of two grades.

(8) The result of this system is that the producer and independent shipper are beaten out of one grade of grain. The consumer, by having imposed upon him a poor grade of grain under a certificate indicating a higher grade, is compelled, after being defrauded several times, to pay a lower price for a given grade, knowing that the grain received will not measure up to the certificate. And as the value of grain on the farm is fixed by the prices paid in the field of consumption, it follows that this unjust and fraudulent system drives the value of our grain downward for every grade.

(9) This is clearly established by testimony from foreign importers, where, it is said, on account of the frauds perpetrated in certifying grain for export at a higher grade than it is entitled to receive, American grain of a certain grade sells for several cents per bushel less than Canadian or Argentina grain of the same grade.

(10) Many of the mills of the country must purchase at the terminal elevators. They have long since ascertained that no reliance can be placed upon those grades. But in many instances they must not only pay for the mixtures concocted in those elevators, but must pay for the grade at which it is improperly certified. It is said that no purchasers for use will today buy their grain on the Chicago certificates.

(11) The reports of the State warehouse commissions, where such reports are kept, show that there are shipped out from the great terminals from two to four times as many of the higher grades as are received into the elevators at such places, while nearly all of the lower grades, such as No. 4, no grade, and rejected, purchased in, disappear entirely in the out shipments.

(12) A report from a committee appointed by the Bankers' Association of North Dakota, which takes its figures from the records of the grain-inspection department of Minnesota, shows the following table of receipts and shipments of a single terminal elevator for only three months.

	Receipts.	Shipments.
	Bushels.	Bushels.
No. 1 northern	99,711.40	196,288.30
No. 2 northern	141,455.10	467,764.00
No. 3 northern	272,047.20	213,459.30
No. 4	201,267.20	None
No grade	116,021.10	None
Rejected	59,742.30	None
	890,245.10	877,512.00
On hand (estimated)		12,733.10
		890,245.10

The profit in mixing at this elevator for three months, as shown by their report, over and above the regular elevator charges, was $83,720.69. There should be added to this the amount realized from the screenings at about $8 per ton.

A glance at this table will show that there were shipped out of this elevator about twice as many bushels of No. 1 northern as were received in; that there were shipped out about three and one-half times as many bushels of No. 2 northern as were received in. It will also show that 201,000 bushels of No. 4 were received in and none shipped out; that 116,000 bushels of "no grade" were received in and none shipped out, and about 60,000 bushels of "rejected" were received in and none shipped out. In other words about one-half of the entire grain received in passed from No. 4, "no grade" and "rejected" to No. 1 and No. 2. Anyone acquainted with the grain trade will know at a glance that this great difference arising from changing a grade from a low grade to two or three grades higher whereby all of the lower grades are entirely lost, could not be produced by any system of mixing if both the inspection in and the inspection out were made by the same standard.

(13) One single example of the inefficiency in inspecting and grading will be sufficient. The testimony shows that a short time ago one inspector in the city of Chicago inspected in about half a day 250 cars of grain. This required the inspector to walk about 5 miles in going down one side and returning on the other side of the cars. The inspection certainly could not have been very thorough unless he inspected both sides, and with proper implements could determine not only what was at the top, but in the bottom and in the middle of each car. He earned for the board of trade in that time $73 at the regular charges for inspection. The very most that could be said of his inspection would be that he made 250 guesses as to what was inside of those cars and that these 250 cars were sold in the markets upon those guesses.

(14) Under the present conditions an enormons system of mixing or adulteration of grain has been built up, and this adulterated grain is forced on all the home markets and also into the foreign market, destroying all confidence in our grades and working to the detriment of the grain trade. That the manipulators and mixers reap enormous benefit through this system is beyond quesion, but always at the still greater detriment of the producers.

(15) Due to the improper certification and the almost impossibility of securing a high grade of American grain abroad, our grain is being discredited in all foreign countries to such an extent as to rapidly decrease our export trade in many sections, while that of Argentine Republic, Canada, and Australia is increasing in the same proportion that our trade is decreasing.

(16) Under the present system, purchasers are compelled to accept the certification at the great terminals and have no recourse when the product received fails to measure up to the standard of certifitcation.

(17) The independent buyers at the country elevators dare not trust their own judgment in the matter of grades, because they have no confidence in the grades at the great terminal markets where they must dispose of the grain purchased. From experience, however, they know that on the whole the grain will be graded

lower than it is entitled to, and they are therefore compelled to resolve every doubt against the producer.

(18) The price of our grain is finally fixed by the foreign or genearl demand. If that demand is strong, and if the trade is free from contention and disapointment, if the grades can be relied on, no one will deny that it will add to the value of our grain and the consequent legitimate profit of all persons interested in grain. Our consular reports, however, are filled with the bitter complaints made by foreign importers, and they all declare that the dissatisfaction is becoming greater and is now manifesting itself in an organized revolt against American grades, and that our export trade is seriously affected by these complaints.

(19) So universal and so intense have these complaints grown that an association has been organized in Europe with the object of securing some relief against false certification, and thereby facilitating foreign trade in American grain. Appeals have been made to the Secretary of Agriculture and the President of the United States for legislation on the part of this Government which will secure reliable certification.

(20) This rigid and easy inspection opens up another avenue of fraud. The rules can be changed by the boards at any time, and grain which, when it started on its journey toward a terminal, would measure up to a certain grade, will fall short on its arrival, and grain already in the elevator will be raised a grade by this elastic process.

(21) As an example of the effect of this system, we cite one single fact established by the testimony before the committee. An attempt was made a short time ago on the part of the Baltimore grain interest to divert export trade from the port of New York to the port of Baltimore. This was accomplished by greater liberality in inspecting into the elevators at Baltimore. The exporters got rather heavily loaded. The foreign demand did not meet their expectation and considerable losses were liable to follow. They met these losses by a very simple device—that of raising the grade of the grain and putting it on the market at a higher grade than it was entitled to. The dealers prevented losses to themselves by this transaction, but entailed many times the amount of their savings by depreciating the value of our high grade of grains.

(22) The evidence taken before the committee established beyond question the fact of a systematic determination on the part of exporters not to export our highest quality of grain without mixture, because we would thereby establish such a high standard of quality that we might not be able to meet the demand; and because of this, our high-grade grain must suffer a depreciated value to the extent to which it is adulterated.

(23) The testimony taken by the Interstate Commerce Commission in its investigations of the relation between railway lines and elevator interest shows a very extensive system of plugging cars from the loaded elevators for domestic use. It is customary to deduct arbitrarily a certain number of bushels from every car of grain and also a certain number of bushels in addition, called dockage. As the grain is elevated in the elevator it passes through a suction draft which removes from it the lighter kernels, all weed or grass seed, and foreign matter. That which is removed is again cleaned; the worst portions are then sold for about $8 per ton, and the balance, called screenings, is surreptitiously loaded from the elevator into the middle of the cars of higher-grade grain.

(24) It is estimated that less than 4,000 men, comprising the various boards of trade, control the trade of the country in grain and arbitrarily fix the grades and price to be paid the producer. These boards of trade are banded together for the purpose of controlling the business, while the farmers or producers and small shippers are unorganized and unable to secure adequate justice.

(25) In those sections where the great terminal elevators have their line of smaller elevators throughout the country they are enabled not only to fix the price, but in many instances give instructions as to what grade shall be given at any ele-

vator irrespective of what the grain would properly grade.

(26) Under the present system, while the producer receives nothing for the screenings and dockage mentioned above, which are taken from his grain, the value of which far exceeds the cost of their removal from his product, the consumer is compelled to pay for these screenings, which are mixed with the grain which he buys, the full price of high-grade grain.

(27) It is urged by the interests which are opposed to any change that will take from them the power of manipulation that Federal inspection and grading is not feasible. They have given no substantial reason for this objection. No one can doubt that Federal authority could take the same inspectors at these great terminals and perform the services that are now being performed by them fully as competently as are being done under the present system. Nor do we think there can be a reasonable doubt that under Federal authority the inspection would be far better done. The Government is establishing laboratories over the entire country. The Government inspectors would be compelled to keep informed of the investigations made by these laboratories and the information obtained could be practically utilized.

(28) The Federal Government could adopt a uniform system that would answer all practical purposes and would meet the demands of the commercial world. This would eliminate the present injustices that are perpetrated against dealers, producers, and consumers alike. The employees would be free from obligation to the power that secures their appointment.

(29) Federal inspection and grading can not possibly harm anyone except him who is being benefited by the present wrongful system.

(30) Federal inspection would do away with this rigid and loose system of inspection and grading under which the greater proportion of frauds and injustices are perpetrated, and in its place that certainty in grades so essential to the grain business would be substituted.

(31) There would be no inducement or reason for the inspector to resolve all doubts against the producer and in favor of the terminal purchaser.

(32) Under Federal inspection and grading, grain received into the terminal elevators would be honestly and fairly inspected. If different characters of grain entering into those elevators were mixed together, Federal inspectors would apply the same test and standards in inspecting it out of the elevators. This would be of especial advantage to our export trade and would facilitate our commerce in grain as meat inspection has facilitated our commerce in meat.

(33) But it has been suggested that by the adoption of a Federal system of inspection we would force a double system upon the country. This is not true. Ninety per cent of the grain handled at the great terminals is interstate grain, and no board of trade or State would attempt to continue its inspection system over the other 10 per cent.

(34) Again, every producer who desires to secure the actual grain desires also that that grain measure up to the standard of its certification, and such purchasers would demand the Government certificate because it would carry the greater confidence.

(35) So, too, the foreign demand is universal for a Government certification, and they would purchase on the Government certificate only.

(36) Under our present system of meat inspection all meat at the packing house is inspected by the Government without regard as to whether it is intended for domestic or foreign use. The packers desire this to be done for their own benefit. If the Government can do this for the packers at its own expense, it certainly would not refuse to inspect and grade the other 10 per cent of intrastate grain at these terminals for the fees which would be charged and which would cover its expense. This would do away entirely with State inspection.

(37 It is safe to say that all grain producers of the Northwest heartily desire Federal inspection. All of the independent grain dealers desire it. The great majority of the millers desire it. The foreign purchasers ask it. The legislature of

at least one of the States, and it is one of the greatest grain-producing states in the Union, has petitioned repeatedly by resolution for Federal inspection. This universal demand of itself should be sufficient to secure this proposed legislation.

(38) Those who are charged, and, in our opinion, justly charged, with profiting by the misuse of the authority and powers placed in their hands under the present system are the only ones who are objecting to Federal inspection. And the only reason that they have attempted to urge it is that it is not feasible to have uniformity or Federal inspection. A complete answer to both of these propositions is that the Government can certainly do as well as is being done under the present system. It can enforce uniformity of grading and it can eliminate the present injustices in grading.

(39) Another very potent reason why the Federal Government should control the grading and inspection of grain is that such inspection and grading are for the most part done in a State other than that in which the grain is produced. The producer, therefore, has no voice in determining the rules or the laws which shall govern the handling or grading of grain. He is absolutely at the mercy of the terminal purchaser and the combinations which seek to make illegitimate profits out of the product of his labors. There should be a forum in which both the producer and the purchaser could be heard. Federal inspection under Federal authority would give this opportunity to be heard.

(40) We believe that the only efficient remedy for the present injustices is the absolute divorce of the purchasing interest from the inspection and grading of grain, and this can alone be done by Federal authority.

The enactment of this law will not cause any additional expense to the Government for the reason that under the terms of the bill the service will be self-supporting. To have a competent corps of inspectors at the present markets it is estimated would require from 300 to 500 persons, including laborers and clerical force, at salaries ranging from $500 to $3,500 per annum. At an average of $1,200 per annum the expense of the service would be from $350,000 to $600,000 per annum. The present charge for inspection is from 35 to 75 cents per car or thousand bushels, and from one and a half to two million cars are inspected annually, which, at the present price of inspection, would bring in a sum largely in excess of what would be necessary for the service. It is believed by your committee that under the terms of this bill the inspection charges will average much less than the present charges and still produce an adequate sum to cover all the expenses of the service.

The passage of the bill is recommended.

Senator W. A. Clark's Orchard– Missoula.

ADVANTAGES OF MONTANA AS A FRUIT GROWING DISTRICT.

(By M. L. Dean, State Horticulturist.)

In all mountainous countries advantages may be taken of the general contour of the country to the extent that conditions may be selected favorable to almost any industry. This is especially true from the standpoint of fruit growing in Montana. The state being traversed by mountain ranges it is possible to select almost any location desired for the purpose of growing fruit regarding altitude, soil and drainage. The phenomenal success of fruit growing in Montana has been due to the natural conditions of soil, water, elevation, and atmospheric conditions. Frost injury is seldom manifest on the benches.

Altitude.

It is true that altitude has much to do with the control of temperature, and some of the other conditions which help to develop our fruits. And it is also true that altitude has much to do with the quality of fruit from the standpoint of texture and color. The nearer the sea level, the softer the texture, and usually the duller the color, which makes the fruit undesirable for long shipping, and less attractive to the fastidious epicure. Consequently Montana has advantages over many fruit growing sections in that respect, as the mean elevation ranges from 2,000 to 5,000 feet. The bulk of the commercial fruit growing territory ranges in altitude from 3,000 feet to 4,500 feet, but there are some orchards producing a high quality of fruit that are located above 5,000 feet.

The main point to be considered regarding altitude is the careful selection of varieties suitable to the different ranges of height above sea level.

Altitude in a measure controls the clearness of atmospheric conditions, and this is very desirable in the development of clear, bright color, which is an essential factor from a commercial standpoint, and equally profitable when dessert qualities are considered, because invariably with good color we get good flavor.

Freedom From Insects and Diseases.

We cannot claim that Montana is free from insect pests or diseases that are injurious to fruits of different kinds, but it is a fact that there are none of the serious pests in the orchard sections of Montana that are not absolutely controlled by the up-to-date orchardists to the extent that they are no menace to the orchards.

There are many of the scale insects found in older developed fruit sections of the country that are unknown in Montana.

The codling moth, which is one of the worst enemies to the fruit grower, is unknown in the orchard districts of the state. It is estimated that the loss from the codling moth or fruit worm, over the whole country covers probably from thirty to fifty per cent of the annual crop. This means a loss, and a cost of treatment of upward of $20,000,000, if all orchards were properly sprayed to control the pest. This simply calls attention to the fact that it is of paramount importance that not only the

codling moth, but all pests, should be controlled in all sections, and, if possible, their introduction prevented by rigid inspection laws.

The codling moth is located in nearly all the towns and cities in the state where any amount of fruit is shipped in from other sections of the country. The larvae and cocoons have been brought there in the fruit boxes, and in that way distributed, but the pest has reached only a few of the orchard sections, and where such has been the case, it has been absolutely eradicated before seriously spreading through the orchards.

The San Jose scale damages the fruit interests, where prevalent, to the extent of more than $10,000,000 annually. This pest has not yet been found in Montana.

The apple scab is one of the serious diseases which becomes a menace to the fruit growers, and annually places a toll of millions of dollars on the orchardists of the country. This disease is prevalent in nearly all the orchards west of the range of mountains, but all of the first class growers control it by thorough spraying to the extent that it is of no serious damage to them.

All of the fruit sections east of the Rocky Mountain range are at this time free of insects and diseases, except the green aphis.

Soil.

The soil n the benches, which are the desirable fruit lands in Montana, is mostly of a disintegrated granite formation. In some places we find a little volcanic ash. To the casual observer, many times the soil appears to be light, stony, gravelly, and comparatively worthless, but quite the reverse is true.

Where sufficient moisture is prevalent by rain or irrigation, and good culture is given, the main difficulty is to restrain too rank a growth of tree.

It is soil that does not bake after irrigation.

Water.

Another important factor to be considered is the abundance of water, easily available for irrigation.

Irrigation in orcharding places the growth of plant or tree under absolute control. Some seasons very little or no irrigation is used in young growing orchards.

Sunshine and Color.

Sunshine and a clear atmosphere are two necessary adjuncts for the development of high grade fruit. Bright, clear sunshine is conducive to clear, bright color. Bright sunshine is equally derogatory to the development of fungous and bacterial troubles. A bright ray of sunshine will destroy disease, spores, and germs more rapidly than the most efficient power spray outfit handled by the most expert orchardist in the country. The value of this is not always considered when fruit growing locations are desired. A bright, clear color indicates freedom from fungous troubles, and with it we always find a high development of the elements which make up the inner parts of the fruit. This develops a

texture and flavor which are pleasing to the most delicate taste. This applies to all fruit grown in Montana. It is equally true in fruits grown in any of our northern states, because the highest quality in any fruit is always developed at the extreme northern latitude in which that fruit will grow and mature.

Montana has the advantage over many other sections of the northwest in that the ripening dates of the fruit are a little later than they are nearer the coast. This is an advantage in that the large bulk of the fruit is ripened and pushed into the markets in the early part of the season, and many times creates a congested condition, but Montana's fruits being a little later in ripening, come into the market after this congested condition has cleared away, and receive an advantage regarding price.

Varieties.

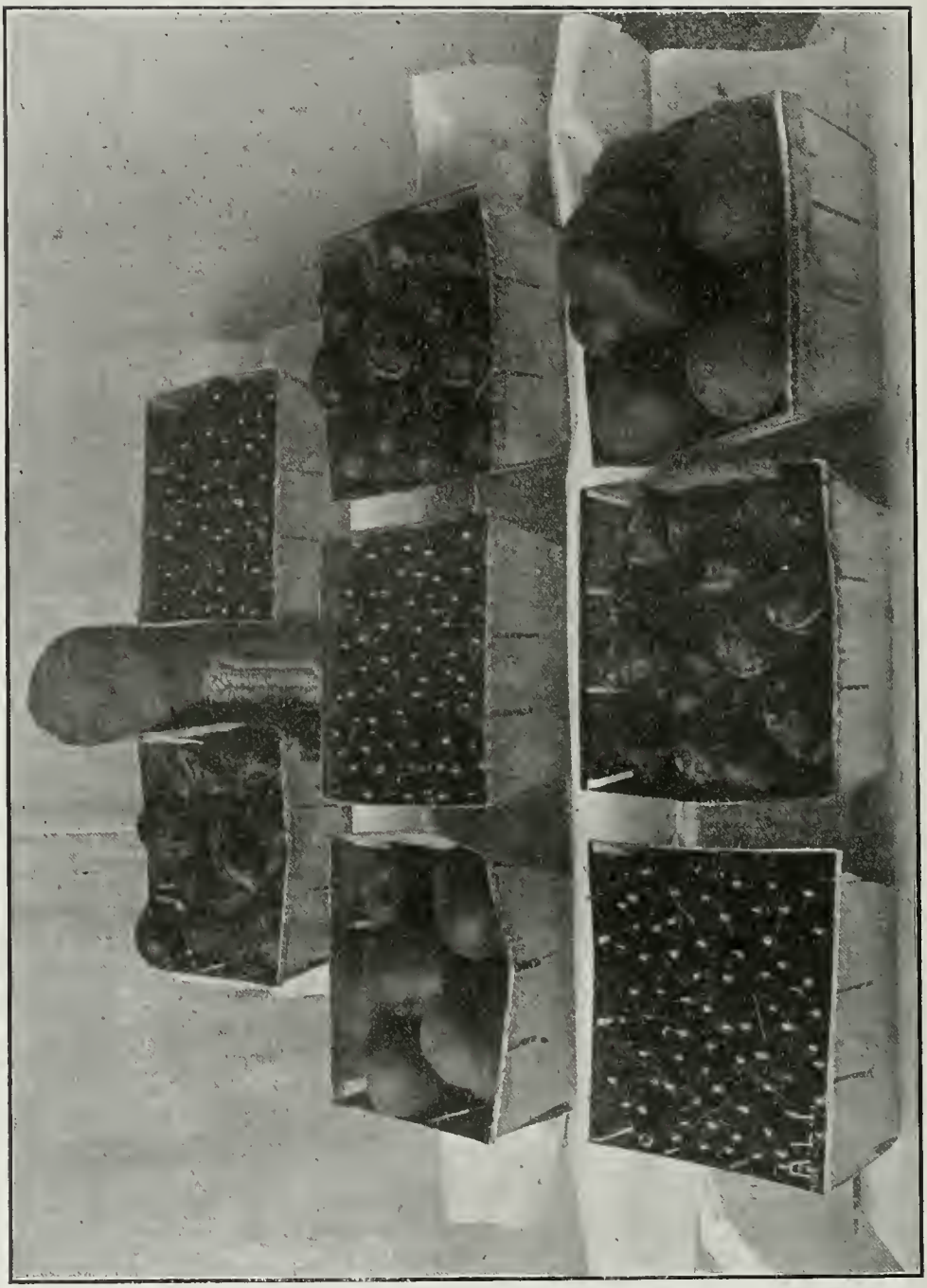
There is a wide range of varieties of fruit that will succeed in Montana because of the different locations which can be selected in the valleys and country tributary to the different mountain ranges, which makes a wide variation of conditions. There is not sufficient attention paid to this point when the selection of an orchard site is considered. In all known fruit sections of the world there are certain conditions that are suitable for the growing of certain varieties of the different fruits grown in those sections, and the more this point is considered and carefully studied with the one point in view to select the particular varieties suitable to those conditions, the more successful will be the operation. This fact makes it impossible for any one class, or set, of varieties to be equally adapted to all sections of the country, and every individual grower must first study his conditions carefully and then select varieties suitable to his conditions.

Apples.

The varieties of apples most grown in Montana are divided into classes according to the sections of the state in which they are to be grown. There are parts of the state where only the most hardy varieties should be considered. This is especially true in the northern and eastern parts of the state, but even in those sections of Montana, if the proper varieties are selected, and the orchard site located as it can be in every community, there is no county but what sufficient fruit can be grown to supply any farm home with this luxury according to their needs.

In the parts of the state considered as commercial sections, a different class of varieties is considered. Among the most hardy sorts are the Russian varieties, and many varieties that are hybrids, but in this class of fruit we do not find a high grade of dessert quality, yet if cultivated properly they are equal to any of the American varieties for culinary purposes.

The most hardy sorts grown in Montana are the Alexander, Wolf River, Anisim, Antonovaka, Duchess, Bogdanoff, Borovinka, Charlamoff, and Hibernal, all of which are Russian varieties of value. Walbridge and Okabena are two very hardy American varieties.



Fruit From Thompson Falls.

The earliest varieties are the Yellow Transparent and Lieveland Raspberry, two varieties which should be included in every farm orchard, and when nicely grown they are valuable commercial sorts in some markets.

Some of the crab apples are very hardy and should be included in a home orchard. Among the most hardy, and yet desirable crabs, are the Martha, Whitney, Early Strawberry, Minnesota, Hyslop, and Gideon, which is a very large attractive apple, though not usually considered one of the crabs.

The Transparent crab is a popular variety, but its susceptibility to the blight is sufficient to bar it from the list. This is also true of the Alexander. The Russian varieties are all more or less susceptible to this dread disease.

In the commercial sections, including the Bitter Root valley, Flathead, Sanders county, parts of Yellowstone and Carbon counties, Madison, Jefferson and Missoula counties, we find a different class of varieties including in the order of their prominence, the McIntosh, Wealthy, Northwest Greening, King, Northern Spy, Wagener, Gano, Fameuse (or Snow), Rome Beauty and Delicious. There are many other varieties that are planted, and where fruited in favorable locations, have reached a fancy development. This includes the Gravenstine, Winter Banana, Belmont, Baldwin, Grimes Golden, Jonathan, Sweet Bough, Talman Sweet, and Bailey Sweet.

The Spitzenburg and Yellow Newton do not reach sufficient size in all sections to make them particularly attractive, although there are a few localities where they are grown with a wonderful degree of success.

There are a great many other varieties that are grown, but these include the most prominent sorts.

Pears.

Among the pears those that have proven themselves best adapted to the conditions in Montana are the Anjou, Bartlett, Clapp, Clairgeau, Duchess, Flemish, Louise Bonne, Seckel, Sheldon and Winter Nelis. All of these varieties do especially well west of the range, but east of the mountains very few pears have been abe to withstand the changeable conditions during the winters.

The pear industry is very remunerative in some parts of Montana as conditions are ideal for the development of a grade of fruit that will stand up under long shipment, and yet retain a high degree of quality.

Plums.

In the eastern part of the state many of the American sorts, which include the wild plum, grow to perfection. Some of these have been cultivated and improved by nurserymen until a good degree of quality has been developed. In this class we find such varieties as the DeSoto, Excelsior, Forest Garden, Forest Rose, Hawkeye, Rolling Stone, Weaver and Compass which is a hybrid of the Sand Cherry and Miner Plum, and which has proven particularly hardy, growing very successfully where

it seems almost impossible to grow any of the other plums, and under these condtions it fills a very good purpose for jellies and canning.

West of the range where European varieties do best we find the most popular sorts to be Bradshaw, Blue Damson, Green Gage, Gold Drop, Lombard, Pond, Peach, and Yellow Egg.

Among the most desirable prunes are the German, Italian, Golden and Hungarian.

Of the Japanese plums the two most popular varieties are the Abundance and Burbank.

Peaches.

In the Bitter Root valley there are locations where peaches produce annually, but the varieties are mostly seedlings that have grown from pits planted by the people living in the valley. Some of them are fairly good in quality. In a few orchards we find some good budded stock.

Around Flathead lake there are a few orchards in which can be found several varieties of peaches. In Sanders county near Plains, and west from there following the river west near Thompson Falls, Belknap and White Pine, there are a few peach orchards consisting of five acres each, in which are grown some very fine Arctic, Dewey, Champion, Early Crawford, and some of the later yellow peaches, but it is uncertain about their maturing every year.

Some very choice apricots are grown in orchards on the shores of Flathead lake, the especial varieties being Gibb and Moorpark.

Grapes.

What has been said regarding the peach is quite true of the grape. There are several orchardists in the Bitter Root valley who have put out quite extensive plantings of the grape. Tributary to Missoula some grapes are grown on the benches and at St. Ignatius Mission there is located the largest vineyard in the state, consisting of Moore's Early, Concord, and Niagara.

Grapes are not considered as holding any prominent place from a commercial standpoint in Montana, as the nights are not sufficiently hot to develop a high grade of grape sugar. They do not develop enough sweetness to become popular for dessert use, although for jellies and canning they are quite desirable.

Cherries.

West of the mountain range cherries of nearly all kinds grow luxuriously and are very profitable. East of the range the conditions are not so favorable, although there are a few of the sour Russian varieties that do fairly well. West of the range the most popular varieties are the Early Richmond, Dyehouse, Montmorency, Wragg, Olivet, and the English Morello. Among the sweet cherries the Bing and Lambert are extremely profitable and are being very largely planted. The Royal Ann does especially well, but it has rather a soft texture, hence is not so good a shipper as the aforesaid varieties.

Cherry growing is one of the most promising fruit industries in

Big Black Luscious Bing Cherries in the Bitter Root Valley, near Missoula - Car Loads of These Go to the Eastern Markets.

Montana at the present time. The Bings and Lambert especially are of exceptional high quality, and come onto the market following the cherries grown in western sections, which makes conditions very favorable for their bringing a good price to the growers.

Montana cherries stand up particularly well for shipping long distances, having been sent to New York and returned to Montana in good condition.

Bush Fruits—Currants and Gooseberries.

Among the bush fruits the currant and gooseberry thrive in all parts of Montana. The Red Cross, Cherry Currant, Versailles and Fay are prominent red varieties. The White Grape is grown by some very successfully. A few black currants are grown, the Champion being the leader.

The gooseberries that are the most successful are the American varieties, Houghton, Downing, Champion and Smith. A few of the English varieties are grown, some preferring the Keepsake and Golden Prolific, but some trouble has been experienced with the mildew on the English varieties.

Blackberries.

West of the range blackberries do very well where proper locations are selected for them. Snyder, Lawton and Taylor are as successful as any in the state. In some places the Lucretia dewberry is grown with a fair degree of success.

Raspberries.

The same conditions exist with the black raspberry as does with the blackberry. Where the proper location is selected, and due care given to the cultivation and care, they are quite successful. The Gregg, Cumberland, Eureka and Conrath are as successful as any of the varieties.

Red raspberries can be grown very generally over the state. In some parts a little winter protection is desirable. Among the reds which can be grown in nearly any place east or west of the range, the Cuthbert probably takes first place, followed by the Louden, Kenyon and Marlboro.

A few of the purples are grown. The Columbian is best adapted to Montana conditions, although the Schaffer does fairly well.

Strawberries.

Strawberries can be grown in any part of Montana, in fact the wild strawberry is found on the hillsides and mountains in all parts of the state, which establishes the fact beyond any question that cultivated strawberries can be grown with a good degree of success if the proper location is selected, varieties carefully chosen, and good cultural methods given them.

There is a large list of varieties, but there is one essential point that it is necessary to consider in the selection of varieties, and that is that the list should include both the perfect and imperfect flowering sorts .

The strawberry is a very heavy feeder, and the soil should be very carefuly prepared, and given good culture, if the best results are desired. There is no branch of the fruit industry that gives as good returns as does strawberry growing, especially in Montana where prices are always

good, and where the berries develop a firmness of texture that permits of much longer shipping than do the same berries grown in lower altitudes.

Senator Dunlap (perfect), Haviland (imperfect), are two hardy, productive varieties. The Warfield, another imperfect variety, does very well when planted with Senator Dunlop. Wilson, one of the oldest varieties, and probably more largely grown than any other one, does especially well in Montana, but the berries are rather acid, and not so large as some of the other varieties, although for shipping long distances they are particularly valuable.

Inspection.

Montana has one advantage in that the state probably has the most rigid inspection laws of any state in the northwest.

All orchards and nursery stock, whether shipped into the state or from place of production, are subject to rigid inspection, and this is a means of protection to the grower which is of more value this is recognized by some growers.

Every principal distributing point in the state has a local horticultural inspector whose business it is to inspect all nursery stock delivered at that point, and also fruit that is sent there from other states. At nearly all shipping points where there is any fruit shipped there is a local inspector who frequently patrols the orchards during the growing season, and gives directions as to the best methods of controlling the insects or diseases. This gives the orchardist a protection which added to the natural conditions makes the advantages for fruit growing in Montana very prominent.

Montana State College, Bozeman.

THE MONTANA STATE FAIR.

An important and useful state institution is the Montana State Fair, which is held at Helena every year near the close of September. Organized in 1903, the exhibits and attendance have grown with each year; and the experience of the tenth fair, held in 1912, demonstrated the need for additional grounds and for new buildings to house exhibits. Comparative data show the growth of the institution from the first fair in 1903 to the last one held in 1912. In 1903 the premiums amounted to $9,083.50, in 1912 to $22,476.00; the receipts in 1903 were $16,123.10, in 1912 $40.347.60, a gain of 150 per cent in ten years; the exhibit cars unloaded were 76 in 1911 and 124 in 1912. The attendance from outside of Helena in 1912 was 10,000, and the total number of entries 6,830.

The grains, grasses, fruits and vegetables exhibited at the last state fair and at previous ones were not surpassed in quality by the displays made at any similar exposition in the United States; and in future years there will be even a greater number and variety of exhibits as progress shall be made in developing the agricultural, manufacturing and mining industries of Montana.

"Mr. President, I want to show you the best agricultural exhibit I ever saw," said James J. Hill to President Taft as he entered the agricultural building at the Montana State Fair, September 27, 1909. Later in the day Mr. Hill made an address from which the following extracts are made:

"Montana, as your chairman said, leads, or has led, in the production of gold, and of silver, and of copper, and they have all been extremely valuable in opening up your state; but let me say that the natural wealth of the soil of Montana is greater than the wealth of all the mines within her borders—many times greater. (Applause.)

It is not at all a fancied picture to say that Montana can produce, and that she will produce when she has the people—the industrious population to go out on the soil—over $300,000,000 annually and that will come out of the soil; and when it is done they are ready to turn to the same sources and produce it next year, and the year following, and so for ever. (Applause).

In that building (pointing to the agricultural building), there is an exhibition of agricultural products that cannot be obtained by any state or province on this continent. (Applause). And in some respects I know that it cannot be equaled by any state or province on this continent. (Applause.) I was glad to see your cattle, and they are fine and a credit to the state. I was glad to see your livestock. I was glad to see your fruit. It all goes to make happier, more comfortable lives for the people, but let me say that the great foundation of your future prosperity is in your ground; and Montana, in my judgment, will be the greatest grain growing —that is the growth of small grains will be greater than that of any state in the Union (Applause), and from what I saw I am not prepared to say that Montana will not eventually be a great corn state; but if you are not a great corn state, you will rank in the very foreground in alfalfa, and alfalfa will take the place of corn.***

Montana has within her borders unoccupied agricultural lands equal—practitcally equal, or nearly so—to the entire state of Iowa, or the state of Illinois, and certainly they may be considered the richest states in the Union, but neither the state of Illinois nor the state of Iowa can make as good an exhibit on all counts as you have shown today in the exposition building over there." (Great Applause).

The Montana State Fair maintains a permanent exhibit at its office

in the Kohrs block, Fuller avenue and Lawrence street, which visitors to the state are invited to examine.

Below is a list of the officers, directors and advisory board of the State Fair, and of the principal premiums awarded in 1912:

OFFICERS.

President	Lewis Penwell	Helena.
Secretary	A. J. Breitenstein	Helena.

DIRECTORS.

Lewis Penwell	Helena.
Pat Carney	Waterloo.
I. D. O'Donnell	Billings.
H. H. Strain	Great Falls.
A. J. Breitenstein	Helena.

ADVISORY BOARD.

County.	Member.	Residence.
Beaverhead	F. A. Hazelbaker	Dillon.
Blaine	Jas. Griffin	Chinook.
Broadwater	Peter J. Meloy	Townsend.
Carbon	H. C. Provinse	Red Lodge.
Cascade	Herbert Strain	Great Falls.
Chouteau	Geo. Wackerlin	Fort Benton.
Custer	Truman Ames	Miles City.
Dawson	Geo. McCone	Glendive.
Deer Lodge	Martin Martin	Anaconda.
Fergus	C. L. Wentworth	Lewistown.
Flathead	Fred Whiteside	Kalispell.
Gallatin	C. W. Hoffman	Bozeman.
Granite	Geo. Metcalf	Philipsburg.
Hill	C. B. Griffin	Havre.
Jefferson	J. A. Jergensen	Whitehall.
Lewis and Clark	T. A. Marlow	Helena.
Madison	Patrick Carney	Waterloo.
Lincoln	L .H. Faust	Libby.
Musselshell	M. H. Wall	Roundup.
Meagher	C. W. Cook	White Sulphur Springs.
Missoula	C. F. Dallman	Missoula.
Park	F. C. Sumner	Clyde Park.
Powell	John E. Manley	Helmville.
Ravalli	H. A. Briggs	Victor.
Rosebud	T. E. Hammond	Forsyth.
Sanders	Geo. S. Good	Thompson.
Silver Bow	Wm. Gemmell	Butte.
Sweet Grass	J. S. Campbell	Reed Point.
Teton	David J. Ryan	Conrad.
Valley	Andrew Davidson	Glasgow.
Yellowstone	A. F. McNabb	Columbus.

BEST EXHIBIT OF GRAINS.

County.	Premium.
Park, 1st	$200.00
Cascade, 2nd	150.00
Gallatin, 3rd	100.00
Fergus, 4th	50.00
	$500.00

BEST EXHIBIT OF LARGEST VARIETY OF GRASSES AND FORAGE CROP.

Park, 1st	$200.00
Madison, 2nd	150.00
Cascade, 3rd	100.00
Gallatin, 4th	50.00
	$500.00

BEST EXHIBIT OF VEGETABLES AND ROOT CROPS.

Deer Loge, 1st	$200.00
Cascade, 2nd	150.00
Madison, 3rd	100.00
Lewis and Clark, 4th	50.00
	$500.00

LARGEST VARIETY OF PRODUCTS.

Cascade, 1st	$160.00
Deer Lodge, 2nd	100.00
Lewis and Clark, 3rd	75.00
Madison, 4th	40.00
	$375.00

BEST DISPLAY AND ARRANGEMENT OF EXHIBIT.

Fergus, 1st	$200.00
Park, 2nd	150.00
Deer Lodge, 3rd	100.00
Beaverhead, 4th	50.00
	$500.00

COUNTY POULTRY EXHIBIT.

Silver Bow, 1st	$ 50.00
Deer Lodge, 2nd	30.00
Gallatin, 3rd	20.00
	$100.00

COUNTY PRIZE WINNERS.

County.	Amount.	County.	Amount.
Beaverhead	$ 50.00	Lewis and Clark	$ 125.00
Cascade	560.00	Madison	290.00
Deer Lodge	430.00	Park	550.00
Fergus	250.00	Silver Bow	50.00
Gallatin	170.00	Total	$2,475.00

SWEEPSTAKES:

Draft Stallion—Harvey & Tregloan, Clyde Park, Mont.
Fine Wool Fleece—J. L. Rapstad, Big Timber, Montana.

GRAND CHAMPIONS:

Short-horn Bull and Cow—H. L. Summers, Bozeman, Montana.
Hereford Bull and Cow—A. B. Cook, Helena, Montana.
Galloway Bull and Cow—C. S. Hechtner, Chariton, Ia.
Jersey Bull—W. P. Mills, Missoula, Montana.
Jersey Cow—J. H. Bradley, Cascade, Montana.
Guernsey Bull—Howland Bros., Lo Lo, Montana.
Guernsey Cow—Simpson & Webster, Bozeman, Mont.
Brown-Swiss Bull and Cow—W. O. Bohart, Bozeman, Montana.
Boar—T. B. Haynes, Creston, Montana.
Sow—P. J. Meloy, Townsend, Montana.

POULTRY SWEEPSTAKES:

Cock—T. P. Harris, Helena, Montana.
Hen—Mrs. Sig. Goodfriend, Anaconda, Mont.
Cockerel—Cecil Day, Helena, Montana.
Pullet—J. A. Walstrom, Butte, Montana.

YESTERDAY.
TO DAY.
TOMORROW.

SPECIAL PREMIUMS.

Jacquemin Jewelry Co.—(Silver Punch Bowl and 12 Goblets, value $250.00), for 2 best Pens of Birds, to J. A. Walstrom, Butte, Mont.

Benson, Carpenter & Co.—(Cyphers Incubator, value, $25.00), for Montana Incubated Chickens, to Cecil Day, Helena, Montana.

M. Rumley Co., LaPorte, Ind.—(Rainbow Grader, value, $200.00), for Best Bushel Hard Winter Wheat, to Damerell & Norton, Bozeman.

Royal Milling Co., Great Falls, Montana—(500 lbs. Rex Flour, value, $15.00), for Best Bushel Hard Spring Wheat, to F. C. Sumner, Clyde Park, Montana.

A. J. Earling, Pres. C. M. & St. P. Ry. Co.—(One Hundred Dollars in Gold), for Best Bushel of White Oats, to F. C. Sumner, Clyde Park, Montana.

Montana Brewers' Assn.—(One Hundred Dollars in Gold), for Best Bushel six row Barley), to F. C. Sumner, Clyde Park, Montana.

Thomas Mfg. Co., Springfield, Ill.—(Seed Drill, value, $150.00), for Best Bushel Flax Seed, to F. C. Sumner, Clyde Park, Mont.

T. C. Power Co., Helena, Montana—(Fosston Automatic Grain Cleaner, value $45.00), for Best 3 Pecks of Grain from one farm, to F. C. Sumner, Clyde Park, Montana.

Deere & Webber Co., Minneapolis, Minn.—Deere Corn Planter and Deere Cultivator, value, $110.00), for best Display of Corn, to E. E. Eiker, Osborn, Montana.

Independent Harvester Co., of Montana, Billings, Montana—(Grain Binder, value 200.00), for Best Grain & Seed Exhibit by Homesteader, to E. E. Eiker, Osborn, Mont.

Oliver Chilled Plow Works, South Bend, Ind.—(Sulky Plow, value, $75.00), for Best Collection of Potatoes, to Mitchell & Mussigbrod, Warm Springs, Montana.

Lindsay & Co., Helena, Montana—(Fifty Dollars in Gold), for 100 lb. sack containing the least number of Potatoes, to Pat Carney, Waterloo, Montana.

W. A. Pocock, Prop. Hotel Ryan, St. Paul, Minn.—(Fifty Dollars in Gold) for largest single Potato grown in Montana. 1st, Pat Carney, Waterloo, $25.00. 2nd, J. W. Carney, Waterloo, $10.00. 3rd, F.B. Williams, Dillon, $7.50. 4th, W. Langford, Reed Point. $5.00. 5th, Karl Beehrer Willis, $2.50.

International Harvester Co., Helena, Montana—($350.00 Hay Press), for Ten Best Sheaves of Alfalfa, Wm. Beninger, Anaconda, Montana.

Crane & Ordway Co., Great Falls, Montana—($75.00 Chore Boy Engine), for Best Twenty Pounds of Creamery Butter, to J. G. Howe, Stevensville, Montana.

Vermont Farm Machine Co., Bellows Falls, Vt.—($75.00 U. S. Cream Separator), for Best Dairy Butter, to Mrs. D. Grabam, Belt, Montana.

In addition to the above, Mr. L. W. Hill, Chairman of the Board of Directors, Great Northern Ry. Co., offered $1,157.00 for Non-Irrigated Products, and

Mr. Howard Elliott, President of the Northern Pacific Ry. Co., gave $275.00 worth of Medals for the Boys and Girls' Industrial Contests, and

J. A. Folger & Co., of San Francisco, Cal., gave Special Premiums for each lot number winner in Div. H., consisting of a Cabinet of "Golden Gate" Products, and

The Gurney Seed & Nursery Co., of Yankton, S. D., offered $102.00 in Cash Premiums for products grown from their seeds, and W. Atlee Burpee & Co., of Philadelphia, Penn., offered $20.00 for best display of vegetables grown from Burpee's Seeds.

BOYS' AND GIRLS' INDUSTRIAL CONTEST.

No feature of the fair of 1912 aroused more interest or was fraught with more possibilities of benefit to the agricultural development of Montana than the boys' and girls' industrial contest for the prizes offered by President Elliott of the Northern Pacific Railway Company, for competitors in each of the thirty-one counties. The competition among boys was for the best ten ears of corn or for the best twelve potatoes, and among girls for the best canned fruit or for the best garment and specimen

of needle work. Mr. Elliott offered 31 bronze badges for boys winning the first prizes in county competitions, 31 bronze badges for girls winning the first prizes in the county competitions; 4 gold medals for the winners of first prizes in the state wide competition at the State Fair, namely one for corn, one for potatoes, one for sewing and one for canning; 4 silver medals as second prizes and 4 bronze medals for the third prizes in the competitions named above.

The winners of the county contests were guests of the management during the State Fair, all expenses from their homes to Helena and return were paid by the county commissioners, and Governor Norris presented the prizes to the winning boys and girls in the governor's reception room at the Capitol, where they had assembled to receive them, according to the following list:

WINNERS OF MEDALS.

Girls' Sewing:

Gold—Lillis Dixon, Sweet Grass County.
Silver—Ruth Fitzgerald, Yellowstone County.
Bronze—Ethel Thomas, Custer County.

Girls' Canned Fruit:

Gold—Ethel Smith, Gallatin County.
Silver—Mina Northey, Carbon County.
Bronze—Evelyn Herriott, Sanders County.

Boys' Corn:

Gold—Reese Humphrey, Yellowstone County.
Silver—Winchester Stacey, Custer County.
Bronze—Charlie Drose, Rosebud County.

Boys' Potato:

Gold—Carter Edinger, Beaverhead County.
Silver—N. C. Norcross, Sanders County.
Bronze—Joe Campbell, Sweet Grass County.

COUNTY WINNERS ATTENDING STATE FAIR.

County.	Name.	County.	Name.
Beaverhead .	Carter Edinger.	Gallatin	Delmar White.
Blaine	Leonard Winch.		Ethel Smith.
	Cleo Dowen.	Granite	Ralph Dooley.
Broadwater .	Walter McKnight.	Jefferson ...	Donald Brown.
	Vevah Kay.		Olive Brown.
Carbon	Willie Foust.	Lincoln	Guy Head.
	Nina Northey.		Ordie Gibson.
	Joseph Pierce.		Irene Davidson.
	Emily Gibson.	Madison	Elizabeth Fletcher.
Cascade	Walter Siegland.		Gladys Parker.
	Lorine Burkes.	Missoula	Geo. M. DeJarnette.
Custer	Winchester Stacy.	Park	Arthur Murphy.
	Rebecca Parker.		Judith Murphy.
	(Alternate for Ethel Thomas).	Ravalli	David Hope.
			Minnie Babbitt.
Chouteau ...	Clinton Stranahan.	Rosebud	Charlie Drose.
	Louise Sharp.		Elizabeth Grund.
Deer Lodge .	John Stagg.	Sanders	N. C. Norcross.
	Leora Letke.		Evelyn Herriott.
Fergus	Jack Parrent.	Sweet Grass...	Geo. Campbell.
	Beatrice Roberts.		Lillis Dixon.
Flathead ...	Rob Gatiss.	Yellowstone	Resse Humphrey.
	Irene Schare.		Ruth Fitzgerald.

GOOD ROADS.

One of the needs of Montana is the construction of good roads and as a means to that end the enactment of a new road law. August 11, 1910, Governor Norris appointed a commission consisting of Judge Sydney Sanner of Miles City, Hon. Albert J. Galen of Helena, Judge H. H. Ewing of Great Falls, Hon. Edward Donlan of Missoula, and Hon. J. C. McCarthy of Bozeman as members of a commission to prepare a comprehensive road law for submission to the legislative assembly; and on January 19, 1911, he transmitted to the senate the bill prepared by the commission. "I have not had the opportunity to make a detailed examination of the bill presented," said Governor Norris in his message, "but my high opinion of the men who prepared it and my knowledge of the very earnest consideration given by them to the subject, convince me that the result of their labors merits a most thorough examination at your hands." Owing to the lack of time, however, or for other reasons, the measure received but scant consideration.

A convention of the county commissioners met at Missoula, January 24, 1912, and a committee on legislation was appointed which the governor was asked to name as a "Goods Roads Commission" and to instruct to prepare a "highway bill" for submission to the next legislative assembly. Governor Norris complied with the request, February 21 1912, and appointed the following as members of a "Good Roads Commission," viz: H. C. Patterson of Beaverhead county, G. J Stromme of Silver Bow county, R. W. Main of Flathead county, O. C. Cooper of Ravalli county, M. Sorenson of Yellowstone county, E. M. Kennedy of Chouteau county, R. T. Furnish of Custer county, W. J. Johnson of Deer Lodge county, and C. R. Waterman of Gallatin county.

There is a decided and growing public sentiment that will compel consideration of improvements in the road laws and the labors of these two commissions may aid in bringing about the needed legislation.

Secretary Wilson of the Department of Agriculture has estimated that at least 250,000,000 tons of freight are hauled every year in this country to railroads over dirt roads at an average cost of not less than 23 cents per ton mile and that the average haul is close to nine miles. In France hauling in many cases is done at as low cost as 7 cents per ton per mile, and the average in that country is probably not more than half the average for the United States.

The problem presents many difficulties in Montana owing to the great size and spare population of the state and the presence of rough and mountainous sections through which lines of connecting highways have to be constructed at large cost per mile. The main consideration in building roads should ever be the benefit that will accrue to the farmer and the miner in transporting his products to the railroad for shipment to the market or the mill, and the secondary consideration should be the attractions good roads have for automobilists who should be required to pay a fair sum for using the roads.

The existing system of road construction and maintenance imposes

heavy burdens upon taxpayers without providing them with a permanent system of good highways. A new system is needed which will coordinate in a general plan of road building and maintenance the activities of the counties, the state, and the United States government if federal aid can be secured.

For three years the state has been cooperating with county commissioners in building with the labor of convicts different pieces of road in mountainous regions that could not be built at all without this labor. The work done by convicts, chiefly in Powell, Granite, Missoula and Sanders counties, has been thoroughly satisfactory to the county commissioners who have secured their services under an agreement by which the state furnishes the prisoners and pays an allowance of fifty cents per day per man for maintenance, guard hire, and whatever other expenses may be necessary, and the county supplies the tools and all materials and stands whatever other costs there are above the allowance of fifty cents per day. Prisoners employed on road work who obey the regulations and do good service are allowed ten days per month off their sentences in addition to the good time allowed by law. The prisoners are dressed in the ordinary garb of a working man, are free from chains or manacles, have few guards, and are put on honor. Only a few have abused the trust reposed in them; and, in the judgment of the prison commissioners, their employment has resulted in a decided improvement in their physical, mental and moral condition. In a letter to the commissioner of this bureau, dated August 3, 1910, and printed in the Twelfth Report of the Bureau of Agriculture, Labor and Industry, part 2, page 45, President Samuel Gompers of the American Federation of Labor came out strongly in favor of the employment of Montana convicts in road work for humanitarian reasons, and the results of the experiments so far have vindicated his judgment.

A road across the state, one from the Yellowstone National Park to the Glacier National Park, and others of state wide concern, may ultimately be built chiefly by the labor of convicts; but it would be futile to rely upon the labor of prisoners to improve in this generation any considerable part of the thousands of miles of road that are at present needed for economical transportation of products and for the additional number that will be required as the result of the future development of Montana's natural resources. Existing roads will have to be improved and new ones built by paid labor; and how the funds for the purpose can best be raised and how expended to the best advantage are the problems to be solved.

The Secretary of Agriculture has aptly said:

> The selling price of farm products is largely determined by factors beyond the control of the farmer. His prosperity must be measured by the margin of profit above the cost of production and of transportation; and it is only when the great agricultural population awakens to the realization that the road problem is a farm problem that we can look for substantial progress in the important branch of transportation.

Not alone in reducing the cost of traffic are good roads of benefit to a community but they are important factors in making country life

attractive and promoting social relations among neighbors. Good roads are fatal to illiteracy; where they exist schools are well attended and education flourishes; where they are absent there is a fitful attendance at school, and education languishes. "It is probable that bad roads are partly a cause and partly an effect of ignorance, but it certainly appears that the two are closely related," is the opinion of Secretary Wilson of the Department of Agriculture.

According to the report of the division of public roads of the United State Census Bureau the total mileage of public roads in Montana in 1909 was 23,319 miles; the miles of road per square mile of area were 0.16 and the population per mile of road was 16.

Grain Ranch of E. E. Peterson, Nine Miles S. E. of Kalispell along the Flathead River.

AMOUNTS EXPENDED BY THE SEVERAL COUNTIES ON ROADS AND BRIDGES DURING THE YEARS 1910, 1911, 1912.

COUNTY.	ROADS.		BRIDGES.		ROADS.	BRIDGES.
	1910.	1911.	1910.	1911.	1912.	1912.
Beaverhead	$ 28,700.83	$ 30,13670	$ 7,257.51	$ 8,630.54	$ $32,215.87	$ 9,783.54
Blaine	.....	.....	.....	.....	9,393.99	4,873.79
Broadwater	6,522.54	6,952.83	3,185.91	1,344.75	3,455.45	1,727.91
Carbon	38,499.13	34,803.98	27,878.51	10,441.56	24,956.59	19,159.95
Cascade	46,699.30	36,569.66	36,436.31	18,800.95	47,074.80	10,640.99
Chouteau	42,716.25	46,447.01	23,255.60	29,508.77	35,372.15	11,093.24
Custer	66,782.51	104,725.59	75,956.24	55,048.90	89,922.13	36,180.67
Dawson	15,505.38	29,943.44	7,498.22	5,952.81	40,793.98	7,901.86
Deer Lodge	20,051.16	26,343.28	7,052.95	3,584.71	30,115.69	3,896.51
Fergus	54,017.43	42,083.43	15,920.13	20,101.72	90,104.35	21,778.62
Flathead	64,819.46	97,209.45	17,463.49	34,799.12	64,826.91	37,250.76
Gallatin	34,445.34	41,639.42	13,648.33	16,449.93	37,573.98	6,032.93
Granite	10,011.73	10,659.46	2,014.61	11,581.08	13,955.82	5,211.41
Hill	.....	.....	.....	.....	6,089.73	2,274.04
Jefferson	17,470.62	14,249.96	699.93	347.42	21,007.93	2,140.85
Lewis and Clark	19,599.77	16,704.36	27,786.69	12,635.02	32,567.45	12,101.68
Lincoln	18,602.53	26,390.29	5,093.41	7,961.73	36,124.80	9,369.72
Madison	15,931.69	16,339.58	6,474.73	11,750.50	17,010.02	5,077.64
Meagher	12,168.69	22,911.95	1,142.99	19,178.58	17,243.18	2,601.02
Missoula	26,398.95	49,449.07	91,186.45	22,094.03	53,632.36	9,156.81
Musselshell	.....	1,589.95	.....	10,604.00	34,217.93	63,293.50
Park	19,689.19	19,353.86	16,345.00	5,240.00	25,652.56	4,451.78
Powell	11,657.47	14,764.85	10,614.86	2,230.56	18,385.30	7,851.19
Ravalli	22,304.56	24,691.66	14,802.04	20,137.97	22,422.39	13,025.64
Rosebud	52,827.26	18,200.08	44,487.91	38,399.59	54,401.17	36,932.33
Sanders	9,132.81	22,002.34	4,333.97	115,133.59	43,526.03	26,535.65
Silver Bow	21,221.56	13,090.40	13,684.41	5,761.65	22,472.25	14,246.45
Sweet Grass	8,920.38	17,796.49	13,569.35	41,779.87	12,666.09	7,192.47
Teton	21,155.40	21,073.00	5,135.01	830.00	24,376.35	14,810.00
Valley	15,741.22	31,706.25	27,875.50	30,913.53	29,520.76	29,393.38
Yellowstone	46,036.47	61,658.98	27,631.20	43,621.55	48,315.15	34,761.17
Total	$767,597.73	$905,507.32	$548,431.26	$604,867.43	$1,039,393.16	$470,747.50

Secretary Martin Martin of the Good Roads Congress has collected valuable data relating to road matters for the year 1911, and has compiled a table which, athough incomplete because of lack of information from certain counties is of much interest. In the table is the statement that convict labor had built 25 miles of road in Granite county, 15 in Powell and 12 in Sanders and none in any other counties and that no county had issued bonds for building roads. According to the Good Roads Year Book for 1912, page 237, bonds were authorized by a vote of the people of the following counties of Montana in 1911, as follows: Custer county, $100,000; Sweet Grass county, $35,000; Lincoln county, $125,000; Flathead county, $52,500; a total of $312,500; but it is known that these funds were voted to pay for bridges and only a small part was applied to road building. The table compiled by Mr. Martin is in part as follows:

Planting 1,000 acres of Spring Flax, Big Horn County.

MONTANA ROAD STATISTICS FOR 1911.

COUNTY.	NUMBER OF MILES OF						Tons of Freight Hauled Annually One Mile. (Estimated).	Cost Per Ton Mile. (Estimated).	Amount Collected for Road Fund.	Amount Expended from Road Fund.
	Railroads. (2)	County Roads.	Good Roads.	Fair Roads.	Bad Roads.	Boards Built or Rebuilt.				
Beaverhead	148	1,400	700	300	352	100	.....	....	$20,561.01	$30,561.01
Broadwater	75	525	125	200	200	25	.....	....	10,223.00	6,987.00
Carbon	130	..	....	....	....	....	.....	....	.....	.....
Cascade	264	....	....	....	....	....	.....	....	.....	.....
Chouteau (1)	330	2,500	50	2,000	450	50	.....	....	15,000.00	15,000.00
Custer	258	....	. ..	....	....	....	.....	....	.....	.....
Dawson	93	....	....	....	....	....	.....	....	.....	.....
Deer Lodge	116	300	200	75	25	15	1,250,000	15c	18,451.00	28,453.00
Fergus	137	3,000	150	1,000	1,850	250	800,000	21c	42,000.00	42,000.00
Flathead	177	1,200	500	400	300	....	.....	....	32,000.00	97,000.00
Gallatin	211	800	200	400	200	150	.....	....	33,111.16	34,392.04
Granite	102	1,200	400	600	200	55	.....	....	7,742.00	10,000.00
Jefferson	202	300	100	100	100	....	.....	....	18,000.00	14,400.00
Lewis and Clark	170	1,560	1,000	560	....	150	.....	....	18,800.00	19,760.00
Lincoln	157	500	60	200	240	...	.....	....	.....	29,606.69
Madison	81	....	.. .	....	....	....	.....	....	.....	26,018.14
Meagher	181	1,000	500	250	250	50	.....	25c	14,656.84	13,576.84
Missoula	446	....	....	....	....	....	.....	....	.....	.....
Musselshell	155	....	20	100	....	....	.....	....	.....	.....
Park	150	....	....	....	....	....	.....	....	30,880.67	25,132.82
Powell	139	503	20	150	300	25	50,000	35c	17,480.00	15,250.00
Ravalli	59	530	300	230	. .	....	.....	....	21,615.00	39,343.90
Rosebud	259	....	....	....	....	400	.....	....	32,000.00	23,000.00
Sanders	177	290	80	190	20	40	2,000	75c	7,000.00	22,000.00
Silver Bow	232	300	50	100	150	....	.....	....	17,877.57	15,117.05
Sweet Grass	66	450	100	250	100	25	.....	35c	13,226.36	17,618.49
Teton	241	....	....	....	....	. ..	.....	....	.....	.....
Valley	300	2,600	500	800	1,300	....	1,320,000	43c	28,000.00	27,120.00
Yellowstone	284	1,223	500	500	223	15	.....	....	84,272.91	63,523.93

(1) Blaine and Hill counties included in Chouteau. (2) Brought down to 1912.

THE MONTANA GOOD ROADS CONGRESS.

The Montana Good Roads Congress was organized at Billings, June 16, 1910, in pursuance of a call for a convention issued by Governor Edwin L. Norris at the request of the Billings Chamber of Commerce. To discuss ways and means for the improvement of the public highways of Montana, and to awaken a more general interest in public road building and improvement in Montana were the declared purposes of the meeting. There was a good attendance, able addresses were delivered, and an efficient organization to promote the good roads movement was effected. In 1911 the congress met at Missoula; in 1912 the meeting was held at Anaconda, and in 1913 the congress will meet at Kalispell. At every meeting addresses, discussions and demonstrations of much practical value relating to road building are given.

The third annual convention of the Montana Good Roads Congress was held at Anaconda, July 8th and 9th, 1912, and was presided over by the president, E. P. Mathewson. Instructive papers on matters relating to the building and maintaining of roads were read, some of which have been printed in the proceedings of the convention.

Resolutions were adopted as follows:

"We recommend to the next legislative assembly of Montana the enactment of a law, providing for a State Highway Commission consisting of three members chosen on non-partisan lines, which shall have the general supervision of the highways of Montana, and recommend to the proper parties means and methods for the construction and maintenance of said roads.

"We commend in no mistaken language the work of the state prison commission of Montana and the warden of the state prison, for their zealous and unselfish efforts in the employment of convict labor on the highways and public buildings of the commonwealth.

"We know that great improvements and benefits essential to every individual, community and business enterprise have followed wherever this class of labor has been furnished by the unwilling wards of the state.

"We know that while the financial results have been great, they are of but secondary importance when compared with the mental, moral and physical uplift secured to the laborers themselves.

"No individual, no commission, can engage in a better cause than in extending a helping hand to any class who by their own acts are not able to benefit themselves.

"It must not be said that Montana shall be recreant to this phase of state development so auspiciously begun and so economically administered by our Prison Commission and Warden.

"Individually, as an organization, we pledge our support and influence to the continuance of this class of financial, moral and physical improvements so closely related to the present and future happiness of every citizen of this commonwealth."

"Whereas, In the last analysis, the state itself, rather than the several counties thereof, will be the principal beneficiary of a state-wide system of highways;

"And whereas, the cities of the state will also derive inestimable benefit from a general system of good roads;

"And whereas, the project, in order to be capable of producing a full measure of success and prosperity, is too large and too expensive to be left entirely to the county governments for fulfillment;

"Therefore be it resolved, that it is the sense of this convention that the state itself should become interested in and give its moral and financial support to a state-wide project looking to a complete system of state highways. And to that end the

president of this association is directed to take the matter up with the attorney general with a view to settle the legal aspects of the project and fixing its legal status, before the next meeting of the legislature.

"The president is also empowered to appoint a committee of five members to have charge of this proposition.

"Whereas, the newly created Glacier National Park, containing some of the most wonderful scenery in the world, has been dedicated to the use of the people of the United States, and whereas, large appropriations have been made for its improvement as a national playground;

"And whereas, it is proper that the state of Montana encourage the 'See America First' movement;

"Therefore be it resolved, that this convention urge the construction of a park to park road by the state of Montana.

"Be it resolved further, that the president of this convention appoint a committee of five for the purpose of considering the location of such a road, and its physical and financial construction, and recommending the result of its deliberations to the next session of the legislature for proper action.

"Whereas, the working of state prisoners on state roads or county roads throughout the state has proven an unqualified success in Montana and other states, therefore be it resolved, that we endorse taking federal prisoners from our federal prisons and placing them in our national parks for the building of public highways.

"We strongly commend the action of Governor Norris in appointing the present commission for the purpose of drafting a good roads law for the consideration of the next legislature, and hereby pledge the hearty support and co-operation of this Congress thereto. For the purpose of giving such support and co-operation we recommend that a committee of this Congress shall be appointed, of which the president shall he the chairman, as the representatives of the Congress in forwarding the work of said commission.

"Whereas, the honorable secretary of the interior has promulgated an order compelling the payment of an annual license of $5.00 per year or $1.00 per trip on all automobiles entering the Glacier National Park; and whereas, there is no necessity existing to warrant such order, and the same is a hardship in many cases; therefore be it

"Resolved, that this Congress hereby protests against its continuance and that —the secretary be instructed to forward the protest to the honorable secretary of the interior with an urgent request for its abrogation."

"Resolved, That the Montana Good Roads Congress expresses unanimously the belief that the time has arrived for the federal government to aid the states in the construction of a national system of roads connecting all parts of the country; and believing that the resolution now in the hands of the rules committee of the house of representatives, providing for a joint committee of house and senate to consider the subject of federal aid, will result in positive and permanent progress, we call upon our representatives at Washington to support this measure.

"Resolved, That the Montana Good Roads Congress emphatically places itself on record as favoring a memorial road from Gettysburg to Washington, as a most fitting recognition of the greatness of Abraham Lincoln; and furthermore asks the Montana members of congress to support the measure now pending which relates to this proposition."

The officers elected were:

E. P. Mathewson, President.....Anaconda
D. T. Curran, 1st Vice President.....Missoula
Dr. L. M. Rheem, 2nd Vice President.....Helena
A. J. Davis, Treasurer .....Butte
Martin Martin, Secretary .....Anaconda

COMMITTEES OF MONTANA GOOD ROADS CONGRESS.

Committee on State-Wide System of Highways: John Gillie, Chairman, Butte; A. W. Richter, Missoula; Lewis Penwell, Helena; R. D. Kneale, Bozeman; Joseph A. Edge, Kalispell.

Committee on Highway Law: Clinton H. Moore, Chairman, Butte; Albert J. Galen, Helena; L. O. Evans, Butte.

Committee on Constitution and By-Laws: Malcolm Gillis, Chairman, Butte; A. J. Breitenstein, Helena; Geo. E. Mathews, Lewistown.

Committee on Park to Park Highway: T. A. Marlow, Chairman, Helena; Eugene Carroll, Butte; Frank Alspaugh, Livingston; P. N. Bernard, Kalispell; J. M. Keith, Missoula.

ADVISORY BOARD.

County.	Name.	Address.
Beaverhead	H. C. Patterson	Dell.
Blaine	Thos. Dowen	Chinook.
Broadwater	Hugh Broderick	Townsend.
Carbon	Tom F. Pollard	Red Lodge.
Cascade	L. Newman	Great Falls.
Chouteau	A. W. Merryfield	Fort Benton.
Custer	R. T. Furnish	Miles City.
Dawson	Henry Dion	Glendive.
Deer Lodge	C. A. Tuttle	Anaconda.
Fergus	Geo. E. Mathews	Lewistown.
Flathead	P. N. Bernard	Kalispell.
Gallatin	A. L. Love	Bozeman.
Granite	Henry A. Thayer	Bearmouth.
Hill	J. F. Daoust	Havre.
Jefferson	A. J. McKay	Whitehall.
Lewis and Clark	J. J. Hindson	Helena.
Lincoln	F. P. Garey	Eureka.
Madison	Pat Carney	Waterloo.
Meagher	C. P. Tooley	Two Dot.
Missoula	J. M. Keith	Missoula.
Musselshell	A. A. Morris	Roundup.
Park	H. B. Blair	Livingston.
Powell	H. Z. Bielenberg	Deer Lodge.
Ravalli	O. C. Cooper	Hamilton.
Rosebud	T. E. Hammond	Forsyth.
Sanders	J. C. Eisenmann	Thompson.
Silver Bow	Oscar Rohn	Butte.
Sweetgrass	D. J. Walvoord	Big Timber.
Teton	C. N. Ward	Choteau.
Valley	A. Davidson	Malta.
Yellowstone	W. B. George	Billings.

RAILROADS.

Mileage.

The following extract from the report of the Montana Railroad Commission, dated November 30, 1912, contains the latest official information of the railroad mileage in the state:

The following table, as will be noted, shows a total of 4,377.3 miles of railroad in the state, November 30th, 1912. The only new construction during the year being the Butte, Anaconda & Pacific extension from Browns to Southern Cross 16.5 miles, the new line of the Gallatin Valley Railway Company from Bozeman to Menard 24.9 miles, and the Great Northern branch from Lewistown connecting with its Billings-Great Falls line at Moccasin, 29.9 miles in length. This latter, however, is not quite completed, but it is expected that the branch will be open for traffic about December 1st, 1912.

The Chicago, Milwaukee & Puget Sound Railway Company is doing considerable construction work north, east and west from Lewistown, and in response to the Commission's request for a brief outline showing its present status and probable date of completion, says:

"Lewistown-Great Falls line—Total distance 138 miles; grading well advanced; work has been under way since June, 1912. Will proceed all winter on tunnels and heavy cuttings and concrete structures. Expect to complete entire line by December, 1913."

"We are building our new line from Colorado Junction, to a point a short distance west of Cliff Junction, in all 14.3 miles. This we expect to have completed and in operation during the month of May, 1913."

"Lewistown-Grass Range Line: Total distance 36 miles; last 12 miles being graded. Twenty-four miles about ready for track laying. Expect to complete line July, 1913."

"Hilger-Dog Creek Line: Total distance 24 miles; under contract, grading commenced. Will proceed all winter if possible. Expect to operate by August, 1913."

"Lewistown-Roy Line: Total distance about 26 miles; under contract. Expect to work during winter and expect to operate by August, 1913."

"Great Falls, west via Choteau, total distance 65 miles; contract let; expect to work all winter on heavy portion of line, expect to complete grading and bridges by August, 1913. Unable to say when track will be laid."

"Total new mileage under contract 303; of course the estimated date of completion is approximate, and a good many contingencies may arise which may defer the completion of the line until a later date."

Mr. E. A. Tennis, Vice President of the "Three Forks, Helena & Madison Valley Railroad," gives the Commission the following statement:

"The Three Forks, Helena & Madison Valley Railroad will be built from Helena to the Yellowstone Park, a distance of about 150 miles. The first section of 25 miles from Three Forks to Radersburg is about ready for rails and ties, and cars should be moving not later than February 1st, 1913. From Radersburg the line will be extended via Toston and the Prickly Pear Valley to Helena, and later will be extended south from Three Forks via the Madison Valley to the Yellowstone Park, thus serving a section of your state much in need of transportation facilities."

MILEAGE OF ALL ROADS.

Great Northern.

From—	To—	Main Line. (Miles)	Branch Lines. (Miles)
Dakota Line	Idaho Line	691.3	
Great Northern Junction	Great Falls	222.9	
Great Falls	Shelby	99.9	
		1,014.1	
Bainville	Plentywood		53.4
Pacific Junction	Great Falls		119.0
Great Falls	Butte		171.7

Lewistown	Moccasin		29.9
Armington	Neihart		38.2
Gerber	Stockett		7.8
Lewis	Sand Coulee		1.6
Great Falls	Black Eagle		4.4
Vaughn	Augusta		40.6
Virden	Sweet Grass		36.3
Columbia Falls	Marion		38.2
Kalispell	Somers		11.1
Rexford	Gateway		9.8
			562.0

Northern Pacific.

Dakota Line	Idaho Line	777.	
Logan (via Butte)	Garrison	123.6	
DeSmet (via St. Regis)	Paradise	93.3	
		993.9	
Glendive	Sidney		55.7
Laurel	Red Lodge		44.3
Silesia	Bridger		19.7
Mission	Wilsall		22.9
Livingston	Gardiner		54.3
Manhattan	Anceney		15.1
Great Northern Transfer	Elkhorn		22.8
Rimini Junction	Rimini		16.4
Clough Junction	Marysville		12.6
Sappington	Norris		21.
Harrison	Pony		6.6
Whitehall	Alder		45.7
Drummond	Philipsburg		25.9
Missoula	Darby		65.5
St. Regis	Lookout (Idaho Line)		38.2
			466.7

Chicago, Milwaukee & Puget Sound.

Dakota Line	Colorado Junction	520	
Cliff Junction	Idaho Line	214	
		724	
Harlowton	Lewistown		62.4
Lewistown	Hilger		18
			80.4

Chicago, Burlington & Quincy.

Wyoming Line	Huntley	105	
Frannie Junction	Fromberg		29.9

Oregon Short Line.

Silver Bow Junction	Idaho Line	125.4	
Idaho Line	Yellowstone		9.5

Butte, Anaconda & Pacific.

Butte	Browns	31.8	
Stuart	Anaconda		8.4
Browns	Southern Cross		16.5
			24.9

Montana, Wyoming & Southern.

Bridger	White Sulphur Springs	22.9	

Yellowstone Park Railway.

Chestnut	Cooks Mine	10.4	

Gallatin Valley Railway.

Bozeman	Three Forks	38.4	
Bozeman Hot Springs	Salesville		4.7
Belgrade Junction	Belgrade		5.2
Bozeman	Menard		24.9
			34.8

White Sulphur Springs & Yellowstone Railway.

Ringling	White Sulphur Springs	22.9	

Montana Western Railway.

Conrad	Valier	20.2	

Gilmore & Pittsburg R. R.

Armstead	Idaho Line	37	

Big Blackfoot Railway.

Bonner	McNamara's Landing	11	

Summary.

	Main Line. (Miles)	Branch Lines. (Miles)	Total. (Miles)
Great Northern Railway	1,014.1	562.0	1,576.1
Northern Pacific Railway	993.9	466.7	1,460.6
Chicago, Milwaukee & Puget Sound Ry	734.	80.4	814.4
Chicago, Burlington & Quincy R. R.	105.	29.9	134.9
Oregon Short Line Railroad	125.4	9.5	134.9
Butte, Anaconda & Pacific Railway	31.8	24.9	56.7
Montana, Wyoming & Southern R. R.	25.	.....	25.
Yellowstone Park Railway	10.4	.....	10.4
Gallatin Valley Railway	38.4	34.8	73.2
White Sulphur Springs & Yellowstone Park Railway	22.9	.....	22.9
Montana Western Railway	20.2	.....	20.2
Gilmore & Pittsburg R. R.	37.	.....	37.
Big Blackfoot Railway	11.	.....	11.
Total	3,169.1	1,208.2	4,377.3

Proposed New Lines.

"From personal observation and knowledge of the country I am convinced that Montana is very soon to be a veritable gridiron of railways. This condition I believe will come about in the next few years, and is but a natural sequence, for Montana is the very granary of the world."

The foregoing statement made by John D. Ryan, president of the Amalgamated Copper Company confirms a belief that generally prevails that Montana is on the verge of a period of unexampled activity in railroad construction. "The Great Northern, the Soo, and the St Paul roads will rush 10,000 men to railroad construction fields of the Northwest in the spring of 1913, where 5,000 miles of new track will be laid, largely in Montana," is a recent news item from a Boston financial paper. There is scarcely a town in the state without railroad facilities that has not found encouragement to hope that it will soon enjoy the advantages of being on a line of railroad; and some towns that now are reached by but one line are confidently looking forward to the coming of another line or perhaps two others. Transcontinental lines passing through the northern part of the United States on the way to the Pacific coast must pass through Montana and there will be an increasing amount of business coming into the state from north of the international boundary line on the way to ports on the Pacific coast or on the Gulf of Mexico. The development that is taking place in all parts of the state will justify the building of many branch lines as feeders to the main lines; and the state is so vast in extent that some branches will be as long as are important railroads in more thickly settled states. The potentialities of Montana for originating business for the railroads are fully appreciated by the far-seeing men who direct the policies of great railroad systems, and for these reasons it is believed that the railroad mileage in Montana may be doubled within the next five years.

This office has not the information needed to confirm or to deny the many articles that have been published in the newspapers of the state relating to new railroad lines, but has compiled the following authentic information concerning proposed railroad extensions.

The Lewistown-New Rockford branch of the Great Northern railroad is to be constructed through a part of Montana that the Mondak-Helena cut-off was expected to pass through and its ultimate destination will probably be Helena. At Lewistown connection will be made with Great

Falls, from which city has been constructed a line up Sun river which may be extended across the Rocky Mountains and down Big river to connect with the main line at Essex. Articles of incorporation of the Montana Eastern Railway, which is the name of the subsidiary corporation which will construct this branch, have been filed in the office of the Secretary of State and of the clerk and recorder of the counties in which the tracks will be laid. The route is eastward from Lewistown through Fergus and Dawson counties to Fairview on the boundary line between Montana and North Dakota thence in an eastern direction to New Rockford, Eddy county, North Dakota. The capital stock of the company is $10,000,000 and 315 miles of road are to be built in Montana and 250 miles in North Dakota, a total of 565 miles.

From Snowden, a station in Valley county on the main line of the Great Northern, a few miles from the eastern boundary of Montana, a line has been constructed to Fairview which will serve to connect the Lewistown-New Rockford branch with the main line. A costly bridge will soon replace the temporary structure that has been built across the Missouri river.

A piece of road to be known as the Bainville Northwest line is to be constructed by the Great Northern according to a resolution filed in the office of the Secretary of State which describes the route as follows:

"Beginning at a point on this company's present located line, in the northwest half of section 25, township 35 north, range 53 east, Montana principal meridian, and extending thence westerly to a point on the west branch of the Poplar river, about 12 miles south of the international boundary line, a distance of about 67 miles, all in Valley county."

This line will probably start from Plentywood, the terminus of the branch that runs north from Bainville on the main line a distance of 53 miles, and extend west through an excellent country lying between the international boundary line and the northern boundary of the Fort Peck Indian reservation.

The Great Northern has recently completed a line from Great Falls up the Sun river valley to Augusta; and the Great Falls and Teton County Railway Company, which is said to be a subsidiary company, is now building a line from Power on the Shelby branch of the Great Northern to Choteau, the county seat of Teton county, a distance of 20 miles, thence to Bynum, 14 miles northwest of Choteau, and thence across the dry fork of Marias river to Dupuyer.

The Chicago, Milwaukee and Puget Sound Railway is at work on the Lewistown-Great Falls line, 138 miles long; the Lewistown-Grass Range line, 36 miles long; the Hilger-Dog Creek line, 24 miles long, and the Lewistown-Roy line, 26 miles long, is under contract; and a contract has been let for the Great Falls-Choteau branch, 65 miles long, which may terminate, for the present, at Agawam, 13 miles north of Choteau. Eventually this line or one built from Great Falls may be extended across the Rocky Mountains and connect with the main line near Missoula and

with a line that may be built through the Big Blackfoot and Swan river countries into Kalispell and beyond that city.

The construction of a railroad from Three Forks to Helena and later from Three Forks up the Madison valley is promised in the statement made to the Railroad Commission by Mr. E. A. Tennis, vice president of the Three Forks, Helena and Madison Valley Railroad Company, which is quoted on an earlier page.

The "Soo" to Build 725 Miles of Line in Montana.

Rumors of the intention of the "Soo" Railroad Company to enter the Montana field have been prevalent for several months. The Valley County News published in November, 1912, the following:

"Representatives of the Soo railway filed with the local land office this week, plats covering their right of way in the eastern part of this county, from the Dakota line west. According to the plats filed, the Soo company have secured their right of way, commencing at the east boundary of section 13, in township 36, range 58, and extending west through 36-57 and 36-56, within about eight miles of Plentywood. It is understood that they have rights of way secured further west, but the plats filed only included this territory."

Announcement that the "Soo" Railroad Company would build 725 miles of line in Montana was made in Minneapolis, January 24, 1913, by President Edmund Pennington, according to dispatches published in Montana newspapers. The Anaconda Standard gave the following account of this epoch-making announcement:

Minneapolis, Minn., Jan. 24—The Minneapolis, St. Paul & Sault Ste Marie railroad (Soo line), in the biggest constructive plan of any kind that has developed so far this year in the western part of the United States, will put $25,000,000 into the building of 725 miles of new road, will cross the state of Montana, open up an enormous territory for direct connection with the Twin cities and strike the Canadian Pacific somewhere near the extreme edge of Montana, where the state of Washington begins, it was announced by President Edmund Pennington today after his return from Montreal.

Late in December the Soo line was known to have plans for an extension of the Ambrose line 80 miles into Montana and from the Plaza, N. D., line 30 miles to the Missouri river, and these extension plans, although contemplating the construction of only a short mileage, were considered in the railroad world at large as developments of the first importance, marking, as they would, the initial appearance of Soo rails in one of the greatest states of the Union in area, productivity and rapidity of development.

These former plans today fall into a position of comparative minor importance, for the Soo is not only going to build the 30 miles to the Missouri river from Plaza, but, crossing the river at Sansit, will strike west and go over the Montana boundary, follow the Yellowstone river for approximately 250 miles across part of Dawson county, go over the Musselshell river into Fergus county, which is geographically the central county of Montana; cross the southwestern portion of Chouteau county, enter Teton county in the western end of Montana and strike northerly and westerly, going over the Canadian boundary either in Teton or Flathead counties.

A third transcontinental route, with Minneapolis as its principal basis point, will have been created. Two years ago the Soo line began work on an extension from Drake to Fordville, N. D., the full purpose of which was believed at the time to be entrance into a part of North Dakota, where population had increased grain production to an extent making it profitable. This purpose was realized. Today's development shows the relation of the Drake-Fordville plan of that time to an eventual extension for the 725 miles of new road, with connection at Plaza will make possible

the operation of trains on almost a straight line to the Drake-Fordville cutoff to either Minneapolis or Duluth.

President Pennington confirmed the statement that that road has had six locating crews in the field all summer and that they have been working far west in Montana.

In the territory that will be crossed about 70 per cent is agricultural land and 30 per cent grazing, much of which is land that can be irrigated. That part of the new line through Dawson county will open country that is entirely new, in which there is as yet but little settlement and where towns of size are few and far between. The Fergus county territory is similar, but Fergus county has Lewistown as its center and several other places of some importance. Northward in Chouteau county is Fort Benton and west and south in Cascade county is Great Falls.

The December announcement of the purpose of the road to enter a few miles into Eastern Montana was followed by much conjecture in general railroad circles as to what the effect would be upon the business of the Great Northern, Northern Pacific and Milwaukee systems, as the plan so far as then apparent meant that the Northern Pacific business originating in Glendive territory would meet the Soo line competition; that the Great Northern would meet the Soo line solicitations for business in Valley county from the Ambrose extension and that the Milwaukee would meet it in the same territory south of the eastern portion of the Yellowstone river where the Northern Pacific would feel it. These speculative forcasts of competition that would result are now as relatively of as minor importance as were the original announcements.

Construction contemplated for the Soo, in work that will begin in the spring, Montana will be tapped from end to end and will be competitive for the business of the state and a factor in the largest way in the state's development.

The "Soo" railway has its permanent survey completed across the Blackfeet reservation and this week made application to A. E. McFatridge, Indian agent, for right of way across the reserve," says the Valerian of January 24, 1913.

ELECTRIFICATION OF RAILROADS.

That 10,000 miles of railway in the mountain and coast states will be electrified within the next few years by power furnished by hydro-electric plants within that territory is a statement made by John D. Ryan, president of the Great Falls Power Company, in a telegram received at Great Falls, January 9, 1913. The statement follows the announcement from Washington of the granting to the Great Falls Power Company of the right of way for a double power transmission line 150 miles in length for a period of fifty years by which the company will furnish power to the Chicago, Milwaukee and Puget Sound Railroad for the electrification of 450 miles of its main tracks from Harlowton, Montana, and Avery, Idaho. The terms of the grant are set forth in dispatches printed in the Anaconda Standard, January 10, 1913, and the Great Falls Tribune, January 15, 1913; and this epoch-making project was described by the Boston Commercial of January 11, 1913, in the following words:

The United States government through the department of the interior has issued a grant to the Great Falls (Montana) Power company to transmit over public domain under strict government regulations, power for the electrification of 450 miles of tracks of the main line of the Chicago, Milwaukee & Puget Sound railroad between Harlowton, Mont., and Avery, Idaho.

The grant which is for 50 years was worked out under the act of March 4, 1911,

relating to electrical transmission, telephone and telegraph lines. It is subject to readjustment every ten years, provides for regulation of rates and service, the sale of power to the United States, the state and cities at as low a rate as is given any other buyer, and prohibits the transfer of the permit without the approval of the secretary of the interior.

It is estimated that the total cost of electrification of the 450 miles of main line by the Chicago, Milwaukee & Puget Sound Railway company will be in the neighborhood of $7,000,000. In view of the fact that this outlay will be distributed over a period of three years, it is apparent that the new enterprise will not entail any immediate or unusual demands upon the company. It is pointed out that it will be a matter of comparative ease for St. Paul to supply the $2,000,000 or so a year that will be necessary and for that reason it will not be essential for the road to do any extraordinary extensive financing in this respect.

The new electrification by the Puget Sound is to be the overhead wire system. It is expected that, as the work progresses, each 50 miles that is completed will be linked up with the system and placed in operation. It is understood, however, that the company will continue to run a number of its through trains over the main line without use of electricity until the final link of electrification has been completed.

It is understood that the General Electric company is to receive the contract for the work, as the company has had experts in the field for some time past looking over the situation in an endeavor to arrive at an estimate of the total cost that will be involved in connection with the work. It is stated that the preliminary work has already been started and will continue unceasingly until the entire operation is completed.

It is estimated that the saving in operation expenses as a result of the proposed new electrification will be far greater than the average layman may realize. In the first place it means that the company will always have a uniform load of power which will enable it to haul its heavy trains over the mountain grades with comparative ease. It is well known that the concentration of energy is productive of greater efficiency.

The company will receive its power from a number of sources concentrated into one large central power station, so that if the power from one particular source fails at any time there will be sufficient available from other sources to at all times warrant a steady load factor. Power is to be obtained from Great Falls, Madison Falls, Thompson Falls and other minor sources, all of which power projects are now incorporated and under the direct supervision of the Montana Power company.

It is stated that in the case of the St. Paul it will be cheaper to operate the 450 miles of line that will be electrified by electric current, even though such current were to be manufactured by steam, than is possible with the large number of engines that are now used in handling the company's business. As a matter of fact the cheaper hydro-current will be used.

The installation of electrical equipment will be completed as soon as possible, and it will be in full operation within three years. The stretch of road to be electrified traverses three principal mountain ranges, the Belt Mountain, Rocky Mountain and Bitter Root mountains. The combination of water powers in the section where this electrification takes place, under practically the same ownership and management, is the one thing that makes the electrification for such a distance possible.

Short stretches of road may be electrified where the power is furnished from one or two water developments, but it is understood that in this contract it is provided that nine separate and distinct water power developments which are connected in their transmission lines will furnish the power.

Nowhere else in the world is there any electrification covering such a great distance, and it is only possible in this case on account of the ability to draw power from so many sources all connected.

The Butte, Anaconda and Pacific Railroad has already received a part of the machinery and equipment needed to electrify its line between Butte

and Anaconda, and there is reason to believe that within twelve months this railroad line will be thoroughly electrified.

The Minneapolis Tribune says that a stir in railroad circles in the Twin Cities was created when the news reached them from New York of the announcement that the Great Northern Railway was to electrify the route between New Rockford, North Dakota, and Lewistown, Montana, a distance of 530 miles, the cost of electrification alone to represent an expenditure of $10,000,000. The report of the proposed electrification of this lengthy and important new line has not been confirmed; but the project, if not determined upon, will no doubt be earnestly considered by so enterprising a company; and it is to be expected that the Northern Pacific Railway Company will not fall behind its competitors in electrifying its lines.

The outlook at present is that more miles of railroad will be constructed in Montana in the next five years than in any other state, and that its vast hydro-electric power will be used for the movement of railroad cars to an extent not equalled anywhere else in the world.

A Fast Passenger Train.

A DECADE OF GROWTH—1900 TO 1910.

POPULATION.

1900—Population, 243,329.
1910—Population, 376,053.
Increase 54.5 per cent.
1900—Population to square mile, 1.7.
1910—Population to square mile, 2.6.
1900—Urban population, 85,554.
1910—Urban population, 133,420.
1900—Rural population, 158.775.
1910—Rural population, 243,633.
1910—Urban population, 133,420.
1910—Rural population, 242,633.
1910—Percentage of rural population, 64.5.
1910—Percentage of urban population, 35.5.

FARMS.

1899—Value of crops, $10,692.515.
1909—Value of crops, $29,714.563.
Increase, 177.9 per cent.
1900—Number of Farms, 13,720.
1910—Number of Farms, 26,214.
Increase, 96.1 per cent.
1900—Value of all farm property, $117,859,823.
1910—Value of all farm property, $347,828,770.
Increase 195.1 per ceut.
1900—Value of land in farms, $52,660.560.
1910—Value of land in farms, $226,771,302.
Increase 330.6 per cent.
1900—All land in farms—acres, 11,844,454.
1910—All land in farms—acres 13,545,603.
1900—Improved land in farms—acres, 1,736,701.
1910—Improved land in farms—acres, 3,640,309.
Increase 109.6 per cent.
1900—Percentage of land area in farms, 12.7.
1910—Percentage of land area in farms, 14.5.
1900—Value of buildings on farms, $9,365.530.
1910—Value of buildings on farms, $24,854.628.
Increase, 165.4 per cent.
1900—Value of Implements and machinery, $3,671,900.
1910—Value of implements and machinery, $10,539.653.
Increase, 187.0 per cent.
1900—Value of live stock, $52,161,833.
1910—Value of live stock, $85,663,187.
Increase, 64.2 per cent.
1900—Average value per acre of all farm property, $9.95.
1910—Average value per acre of all farm property, $25.68.
Increase, 158.1 per cent.
1900—Average value of farm lands per acre, $4.45.
1910—Average value of farm lands per acre, $16.74.
Increase, 276.2 per cent.
1900—Average value of farm buildings per acre, $0.79.
1910—Average value of farm buildings per acre, $1.83.
Increase, 131.6 per cent.
1900—Wool production, $4,368,230.
1910—Wool production, $6,773.760.
1900—Average value of implements and machinery per acre, $0.31.

1910—Average value of implements and machinery per acre, $0.78.
Increase, 151.6 per cent.
1900—Average value of live stock per acre, $4.40.
1910—Average value of live stock per acre, $6.32.
Increase 43.6 per cent.
1900—Average acres per farm, 885.9.
1910—Average acres per farm, 516.7.
1900—Average improved acres per farm, 129.9.
1910—Average improved acres per farm, 138.9.
1900—Average value per farm of all property, $8,815.
1910—Average value per farm of all property, $13,269.
1900—Average value of land per farm, $3,939.
1910—Average value of land per farm, $8,651.
1900—Average value of buildings per farm $700.
1910—Average value of buildings per farm, $948.
1900—Average value of implements and machinery per farm, $275.
1910—Average value of implements and machinery per farm, $402.
1900—Average value of live stock per farm, $3,901.
1910—Average value of live stock per farm, $3,268.
1900—Farms operated by owners and managers, 12,140.
Percentage of total, 90.8.
1910—Farms operated by owners and managers, 23,870.
Percentage of total, 91.1.
1900—Farms operated by tenants, 1,230.
Percentage of total, 9.2.
1910—Farms operated by tenants, 2,344.
Percentage of total, 8.9.
1900—Farms free from mortgage, 9,858.
Percentage of total, 86.0.
1910—Farms free from mortgage, 18,014.
Percentage of total, 78.9.
1900—Farms mortgaged, 1,608.
Percentage of total, 14.0.
1910—Farms mortgaged, 4,820.
Percentage of total, 21.1.
1899—Number of farms irrigated, 8,043.
1909—Number of farms irrigated, 8,970.
Increase, 11.5 per cent.
1899—Number of acres irrigated, 951,154.
1909—Number of acres irrigated, 1,679,084.
Increase 76.5 per cent.
1899—Cost of irrigation systems, $4,683,073.
1909—Cost of irrigation systems, $22,819,868.
Increase 387.3 per cent.

About two-fifths of all farms in Montana are between 100 and 174 acres in size, which includes the quarter section farms, while about one-fourth are between 260 and 499 acres in size, which includes the half-section farms. Over two-thirds of the Montana farmers are native whites and more than one-fourth foreign born whites. Only 1,196, or 4.6 per cent of all farmers, are non-whites, 1,146 being Indians, 29 negroes, 17 Chinese and 4 Japanese.

WHEAT.

YEAR.	Acreage.	Production, (bu.)	Value.
1899	92,132	1,899,683	$1,077,210
1909	258,377	6,251,945	5,829,389
Increase per cent	180.4	229.1	349.7

OATS.

YEAR.	Acreage.	Production, (bu.)	Value.
1899	133,938	4,746,231	$1,790,938
1909	333,195	13,805,735	6,148,021
Increase per cent	148.8	190.9	243.3

BARLEY.

YEAR.	Acreage.	Production, (bu.)	Value.
1899	22,848	844,140	$341,308
1909	27,242	753,268	478,811
Increase per cent	19.2	*10.8	40.3

*Decrease.

RYE.

YEAR.	Acreage.	Production, (bu.)	Value.
1899	2,003	33,120	$16,546
1909	6,034	111,214	82,669
Increase per cent	201.2	235.8	399.6

HAY AND FORAGE.

YEAR.	Acreage.	Production, (tons)	Value.
1899	875,712	1,059,268	$ 5,974,850
1909	1,135,376	1,692,656	12,344,606
Increase per cent	29.7	59.8	106.6

POTATOES.

YEAR.	Acreage.	Production, (bu.)	Value.
1899	9,613	1,332,062	$ 661,163
1909	20,710	3,240,696	1,298,830
Increase per cent	115.4	143.3	96.4

MINERAL PRODUCTION.

(From the U. S. Geological Survey).

1900—Mineral production including coal, $56,741,145.
1910—Mineral production including coal, $53,687.575.
1900—Mineral production excluding coal, $54,027.438.
1910—Mineral production excluding coal, $48,358,253.
1900—Coal production, $2,713,707.

1910—Coal production, $5,329,322.
1900—Copper production, $39,827,135.
1910—Copper production, $36,170,686.
1900—Gold production, $4,698,000.
1910—Gold production, $3,730,486.
1900—Silver production (Commercial value), $8,801,148.
1910—Silver production (Commercial value), $6,567,942.
1910—Zinc production, $1,708,462.
1900—Lead production, $701,155.
1910—Lead production, $180,677.
1900—Railroad mileage, 3,010.
1910—Railroad mileage, 4,207.
1900—Unappropriated and unreserved public lands, 67,963,057 acres.
1910—Unappropriated and unreserved public lands, 29,053,995 acres.
1900—Revenues of the State of Montana, $1,200,933.63.
1910—Revenues of the State of Montana, $3,284,764.15.
1900—Expenditures of the State of Montana, $1,323,723.09.
1910—Expenditures of the State of Montana, $3,213,091.57.
1900—Assessed valuations of all property, $153,401,591.
1910—Assessed valuations of all property, $309,673,699.
1904—Census Bureau's estimate of the true value of all property, $746,311.213.
1910—Not yet published.

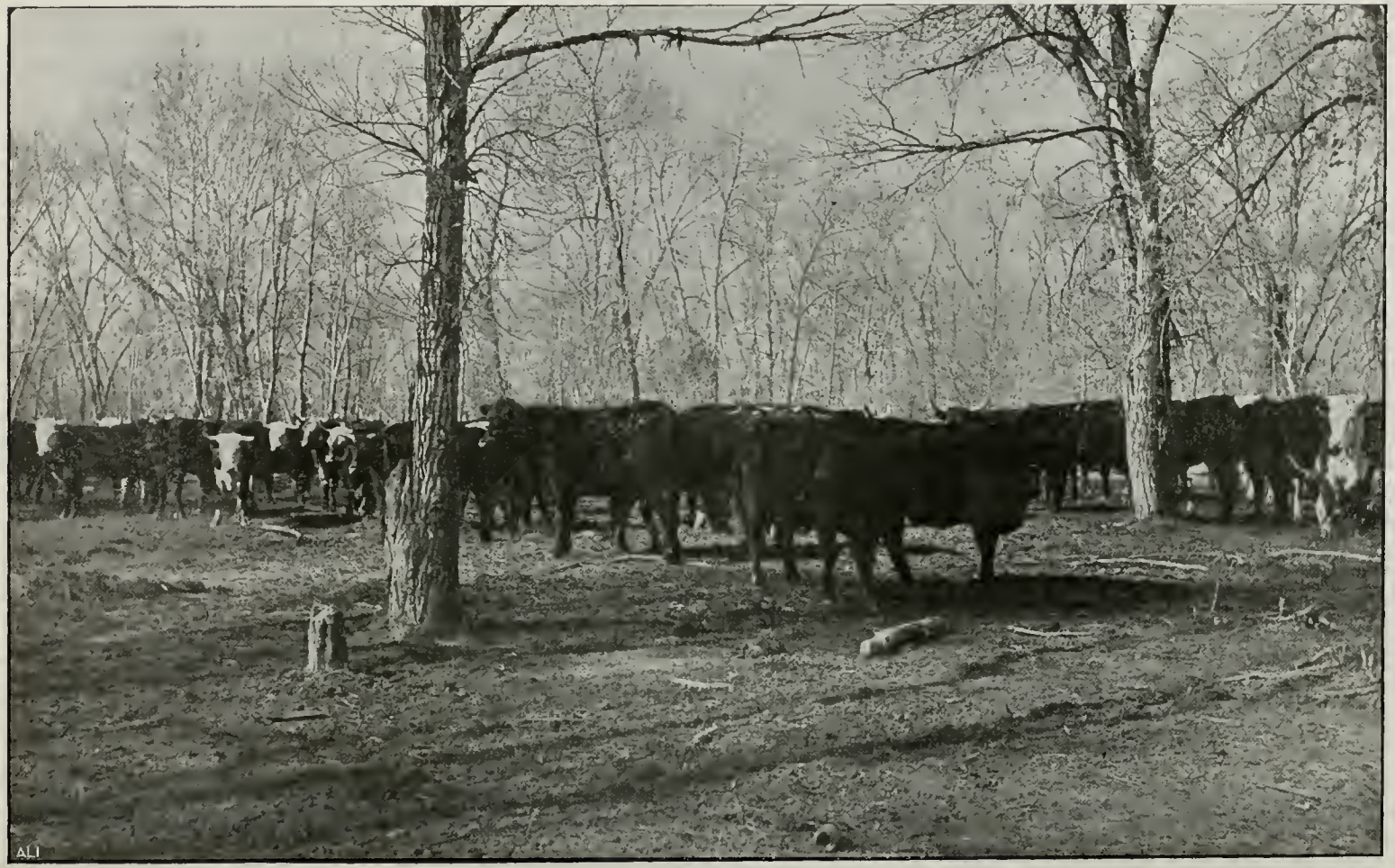
MANUFACTURES.

1904—Number of establishments, 382.
1909—Number of establishments, 677.
Increase, 77.2 per cent.
1904—Persons engaged in Manufactures, 10,196.
1909—Persons engaged in Manufactures, 13,694.
Increase, 34.3 per cent.
1904—Capital, $52,590,000.
1909—Capital, $44,588,000.
Decrease, 15.2 per cent.
1904—Wage earners (average number), 8,957.
1909—Wage earners (average number), 11,655.
Increase, 30.1 per cent.
1904——Wages, $8,652,000.
1909—Wages, $10,901,000.
Increase, 26 per cent.
1904—Value of products, $66,415,000.
1909—Value of products, $73,272,000.
Increase, 10.3 per cent.
1909—Lumber and timber products, value, $6,334,000.
1909—Average number of wage earners, 3,106.

CHAMBERS OF COMMERCE AND COMMERCIAL CLUBS IN MONTANA.

Beaverhead.....Beaverhead Commercial Club, Dillon, W. F. Cashmore, Sec.
Big Horn.....Commercial Club, Hardin, A. L. Mitchell, Sec.
Blaine.....Commercial Club, Chinook, D. B. Watkins, Sec.
Industrial Association, Harlem, J. A. Hatch, Sec.
Broadwater.....Chamber of Commerce, Townsend, Fred W. Schmitz, Sec.
Carbon.....Commercial Club, Belfry, J. O. Higham, Sec.
Commercial Club, Fromberg, S. C. Moore, Sec.
Carbon Commercial Club, Red Lodge.
Cascade.....Commercial Club, Belt, R. H. Bemis, Sec.
Commercial Club, Cascade, George D. Hall, Sec.
Commercial Club, Great Falls, O. M. Holmes, Sec.
Chouteau.....Commercial Club, Fort Benton, H. F. Miller, Sec.
Custer.....Commercial Club, Baker, H. S. Josselyn, Sec.
Commercial Club, Ekalaka, O. A. Dahl, Sec.
Commercial Club, Fallon, A. P. Engebretson.
Chamber of Commerce, Miles City, A. Buchanan, Sec.
Commercial Club, Terry, A. O. Hewitt, Sec.
Dawson.....Dawson County Development League, Glendive, E. C. Leonard, Sec.
Commercial Club, Savage, O. B. Patterson, Sec.
Commercial Club, Sidney, R. E. Northey, Sec.
Commercial Club, Wibaux, R. A. Baxter, Sec.
Deer Lodge.....Retail Merchants' Association, Anaconda, F. T. Ford, Pres.
Fergus.....Judith Basin Commercial Club, Hobson, C. O. Ray, Sec.
Commercial Club, Lewistown, Geo. E. Mathews, Sec.
Boosters Club, Moore, F. C. Roth, Sec.
Commercial Club, Stanford, F. C. Williams, Sec.
Flathead.....Commercial Club, Big Arm, D. B. Irish, Sec.
Civic Club, Dayton, H. A. Kendall, Sec.
Chamber of Commerce, Kalispell, P. N. Bernard, Sec.
Chamber of Commerce, Polson, A. B. Bickford, Sec.
Commercial Association, Whitefish, H. A. Anderson, Sec.
Gallatin.....Commercial Club, Belgrade, Walter Aitken, Sec.
Young Mens' Business Association, Bozeman, H. H. Howard, Pres.
Commercial Club, Three Forks, B. E. Thomas, Sec.
Granite.....Commercial Club, Drummond, R. D. McPhail, Sec.
Chamber of Commerce, Philipsburg, S. C. Rundell, Sec.
Hill.....Commercial Club, Chester, D. Holford, Sec.
Commercial Club, Havre, T. C. Penny, Sec.
Jefferson.....Commercial Club, Boulder, C. E. Trescott, Sec.
Lewis and Clark..Commercial Club, Helena, L. M. Rheem, Sec.
Lincoln.....Commercial Club, Eureka, C. E. Davis, Sec.
Commercial Club, Libby, Door Skeeles, Sec.
Chamber of Commerce, Troy, Wm. Rightbower, Sec.
Madison.....Board of Trade, Sheridan, E. L. Sutherland, Sec.
Commercial Club, Twin Bridges, B. F. Yerkes, Sec.
"The Madison Club," Virginia City, J. Z. Clem, Sec.
Meagher.....Commercial Club, Harlowton, J. V. Kelly, Sec.
Commercial Club, Judith Gap, Oscar Skien, Sec.
Commercial Club, Twodot, S. W. Tindell, Sec.
Chamber of Commerce, White Sulphur Springs, C. E. Wight, Sec.
Missoula.....Chamber of Commerce, Missoula, W. G. Ferguson, Sec.
Commercial Club, Ronan, D. N. Mason, Sec.
Commercial Club, St. Ignatius, V. A. McCormack, Sec.
Musselshell.....Commercial Club, Lavina, Hugh Heaton, Sec.
Commercial Club, Melstone, Thos. Essex, Sec.

	Commercial Club, Musselshell, J. J. McFaul, Sec.
	Commercial Club, Roundup, Edw. F. Parriott, Sec.
	Puhlic Service Committee, Ryegate, Henry Thien, Chairman.
Park	Shields Valley Commercial Club, Clyde Park, O. J. Wakefield, Sec.
	Commercial Club, Livingston, L. R. Nye, Sec.
	Commercial Club, Wilsall, W. G. Maxwell, Sec.
Powell	Commercial Club, Deer Lodge, H. B. Grant, Sec.
	Commercial Club, Ovando, W. R. Glasscock, Sec.
Ravalli	Commercial Club, Corvallis, J. S. Hopkins, Pres.
	Commercial Club, Darby, Al. Rissmann, Sec.
	Chamber of Commerce, Hamilton, Irwin Hayden, Sec.
	Chamber of Commerce, Stevensville, W. A. Heilman, Sec.
	Business Club, Victor, J. Wilson Reed, Sec.
Rosebud	Commercial Club, Forsyth, W. E. Dowlin, Sec.
Sanders	Commercial Club, Camas, Walter T. Gutz, Sec.
	Commercial Club, Dixon, A. C. Thomas, Sec.
	Improvement Association, Heron, Frieda M. Schwindt, Sec.
	Commercial Club, Paradise, J. E. Broom, Sec.
	Commercial Club, Plains, A. F. Marsh, Sec.
Silver Bow	Chamber of Commerce, Butte, Philip W. Blake, Sec.
Sweet Grass	Commercial Club, Big Timber, W. H. Patterson, Sec.
Teton	Commercial Club, Choteau, H. A. Prescott, Sec.
	Commercial Club, Conrad, W. A. Bade, Sec.
	Commercial Club, Shelby, A. T. Wellander, Sec.
Valley	Commercial Club, Culbertson, W. Mathews, Sec.
	Commercial Club, Froid, J. W. Anderson, Sec.
	Commercial Club, Glasgow, S. J. Rundle, Sec.
	Business Mens' Club, Hinsdale, D. L. Blankenship, Sec.
	Commercial Club, Malta, H. M. Kirton, Sec.
	Commercial Club, Medicine Lake, C. E. Comer, Sec.
	Commercial Club, Poplar, H. E. Rickard, Sec.
	Commercial Club, Saco, R. P. Minnick, Sec.
Yellowstone	Chamber of Commerce, Billings, L. C. Monroe, Sec.
	Commercial Club, Columbus.
	Commercial Club, Huntley, S. E. Dove, Sec.
	Commercial Club, Laurel, R. S. Fudge, Sec.
	Chamber of Commerce, Park City, B. M. Harris, Sec.



Cattle on Musselshell Bottoms.

LIVESTOCK.

Livestock production is one of the great industries of Montana. Because of our favorable climate and mountains of lime, phosphate and other rocks containing chemical elements necessary to soil enrichment, Montana's farm and grazing lands will continue to hold their original fertility for centuries yet to come. This insures nutritious grasses and forage crops conducive to the development of healthy and vigorous types of animal life. Montana horses are noted for their powers of endurance. Range horses carry their riders over long distances that would scarcely be credited by persons ignorant of their splendid qualities. Montana race horses are known for records that have astonished the world, and Montana draft horses are not excelled by the draft horses of any other state.

Montana cattle reach the markets in splendid condition and command high market prices. The best quality of dairy cows are to be found in Montana, but stockmen and grain farmers find it difficult to attend the detail work required in successful dairying. This industry will receive greater attention in the future both as a separate business and for the purpose of supplementing the cash returns from crops and from shipments of livestock.

The Secretary of the Board of Stock Commissioners in his report for 1912 says that 188,675 cattle were shipped out of the state for market and that at least 25,000 head were shipped into Montana for range purposes.

Hogs are great money makers for the farmer and are easily fed on alfalfa and clover, finishing with a few weeks on wheat, corn and barley.

ESTIMATED NUMBER, AVERAGE PRICE, AND VALUE OF FARM ANIMALS IN MONTANA, JANUARY 1, 1913.

Compiled from the United States Crop Reporter of February, 1913.

Animals.	Number.	Average Price.			Total Value.
		1913.	1912.	Ten Year Average.	
Horses	354,000	$ 93.00	$87.00	$60.00	$32,922,000
Mules	4,000	109.00	91.00	76.00	436,000
Dairy Cattle	95,000	61.00	49.40	40.30	5,795,000
Other Cattle	717,000	38.40	29.80	23.00	27,533,000
Sheep	5,111,000	3.70	3.30	3.30	18,911,000
Swine	153,000	11.90	9.90	9.60	1,821,000
Total	6,434,000				$87,418,000

Sheep and Wool.

The following tables are taken from the Annual Wool Review, 1912, published by the National Association of Wool Manufacturers, and show the number of sheep of shearing age and the wool product of the United States, the number of sheep in the world, and the wool production of the world. The Association estimates a decrease in the number of sheep fit for shearing of 1,280,000 from 1911, also a decrease of 14,504,500 pounds of wool, exclusive of pulled wool, from last year's estimate. The scoured equivalent is a decrease of 3,029,543 pounds from last year.

The table shows that Montana had 4,300,000 sheep of shearing age,

average weight of fleece 7.25 pounds, product washed and unwashed 31,175,000 pounds, per cent shrinkage 62, scoured equivalent 11,846,500 pounds, average value per pound scoured wool 58 cents, and total value of product $6,870,970.

Montana is still the banner state for sheep. In 1912 our wool product was worth $925,030 more than that of Wyoming, and $3,176,370 more than the product of New Mexico, the two states nearest to Montana in sheep and wool.

A Montana Lamb, Age 5 Months Weight 143 Pounds.

Sheep Camp 8 Miles South of Dillon.

WOOL PRODUCT OF THE UNITED STATES—1912.

States and Territories.	Quality.	National Association's Estimate Number of Sheep of Shearing Age, April 1, 1912.	Average Weight of Fleece, 1912.	Wool Washed and Unwashed, 1912.	Per Cent of Shrinkage, 1912.	Equivalent Quantity of Scoured Wool, 1912.	Average Value per Scoured Pound, Oct. 1. 1910.	1911.	1912.	Total Value, 1912.
			Pounds	Pounds		Pounds	Cents	Cents	Cents	
Maine	10% fine, 90% medium	150,000	6.25	937,500	42	543,750	54	40	51	$ 277,313
New Hampshire	25% fine, 75% medium	33,000	6.50	214,500	48	111,540	49	46	53	59,116
Vermont	20% fine, 80% medium	90,000	6.75	607,500	50	303,750	49	44	54	164,025
Massachusetts	Medium	23,000	6.25	143,750	42	83,375	45	42	52	43,355
Rhode Island	Medium	5,000	6.00	30,000	42	17,460	45	42	52	9,048
Connecticut	Medium	15,000	5.70	85,500	42	49,590	45	43	53	26,283
New York	33⅓% fine, 67% medium	625,000	6.00	3,750,000	48	1,950,000	50	45	52	1,014,000
New Jersey	Medium	17,000	5.40	91,800	45	50,490	46	43	52	26,283
Pennsylvania	60% fine, 40% medium	650,000	6.30	4,095,000	47	2,170,350	55	46	54	1,171,989
Delaware	Medium	5,000	5.30	26,500	44	14,840	46	40	53	7,865
Maryland	Medium	128,000	5.70	729,600	44	408,576	45	42	53	216,545
West Virginia	75% fine, 25% medium	575,000	5.50	3,162,500	48	1,644,500	57	51	56	920,920
Kentucky	Medium	775,000	4.60	3,565,000	37	2,245,950	46	43	53	1,190,354
Ohio	60% fine, 40% medium	2,700,000	6.25	16,875,000	49	8,606,250	55	47	54	4,647,375
Michigan	25% fine, 75% medium	1,500,000	6.75	10,125,000	48	5,265,000	49	45	52	2,737,800
Indiana	15% fine, 85% medium	825,000	6.40	5,280,000	45	2,904,000	46	44	52	1,510,080
Illinois	25% fine, 75% medium	675,000	6.75	4,556,250	47	2,411,813	46	43	51	1,231,555
Wisconsin	20% fine, 80% medium	650,000	6.60	4,290,000	46	2,316,000	42	40	53	1,227,798
Minnesota	20% fine, 80% medium	450,000	6.75	3,037,500	47	1,609,875	42	40	50	804,938
Iowa	30% fine, 70% medium	850,000	6.75	5,737,500	48	2,983,500	46	43	54	1,612,090
Missouri	15% fine, 85% medium	1,100,000	6.75	7,425,000	45	4,083,750	45	39	53	2,164,388
		11,841,000	6.41	74,765,400	46.8	39,777,899				$21,263,070
Virginia	Medium	450,000	4.50	2,025,000	36	1,296,000	47	45	56	$ 725,760
North Carolina	Medium	150,000	3.75	562,500	42	326,250	42	41	48	156,600
South Carolina	Medium	30,000	3.60	108,000	42	62,640	41	40	50	31,320
Georgia	Medium	175,000	3.75	656,256	43	374,063	41	40	53	198,253
Florida	Medium	95,000	3.25	308,750	38	191,425	41	10	50	95,713
Alabama	Medium	115,000	3.25	373,750	38	231,725	41	40	50	115,863
Mississippi	Medium	150,000	3.75	562,500	39	343,125	41	40	50	171,563
Louisiana	Medium	140,000	3.75	525,000	39	320,250	41	40	50	160,125
Arkansas	Medium	100,000	4.00	400,000	40	240,000	40	40	49	117,600
Tennessee	Medium	475,000	4.00	1,900,000	40	1,140,000	43	42	53	604,200
		1,880,000	3.96	7,421,750	39	4,525,478				$2,376,997

WOOL PRODUCT OF THE UNITED STATES—1912—(Continued).

States and Territories.	Quality.	National Association's Estimate, Number of Sheep of Shearing Age, April 1, 1912.	Average Weight of Fleece, 1912.	Wool Washed and Unwashed, 1912.	Per Cent of Shrinkage, 1912.	Equivalent Quantity of Scoured Wool, 1912.	Average Value per Scoured Pound, Oct. 1. 1910.	1911.	1912.	Total Value, 1912.
			Pounds	Pounds		Pounds	Cents	Cents	Cents	
Kansas	Fine, fine med., and medium.	225,000	7.00	1,575,000	65	551,250	52	50	57	$ 314,213
Nebraska	Fine, fine med., and medium.	275,000	6.40	1,760,000	62	668,800	52	50	57	381,216
South Dakota	Fine, fine med., and medium.	475,000	6.75	3,206,250	62	1,218,375	54	52	57	694,474
North Dakota	Fine, fine med., and medium.	250,000	7.00	1,750,000	60	700,000	54	52	57	399,000
Montana	Fine, fine med., and medium.	4,300,000	7.25	31,175,000	62	11,846,500	56	54	58	6,870,970
Wyoming	Fine, fine med., and medium.	3,900,000	8.25	32,175,000	67	10,617,750	55	52	56	5,945,940
Idaho	Fine, fine med., and medium.	2,100,000	7.40	15,540,000	64	5,591,400	52	50	57	3,188,808
Washington	Fine, fine med., and medium.	400,000	9.00	3,600,000	69	1,116,000	54	52	56	624,960
Oregon	Fine, fine med., and medium.	2,150,000	8.50	18,270,000	69	5,665,250	53	52	59	3,342,498
California	33% fall, 67% spring.	1,700,000	7.00	11,900,000	67	3,927,000	46	42	56	2,199,120
Nevada	Fine, fine med., and medium.	825,000	7.00	5,775,000	67	1,905,750	54	50	62	1,181,565
Utah	Fine, fine med., and medium.	1,750,000	6.60	11,550,000	65	4,042,500	52	50	54	2,182,950
Colorado	Fine, fine med., and medium.	1,200,000	6.70	8,040,000	67	2,653,200	47	45	56	1,485,792
Arizona	Fine, fine med., and medium.	850,000	6.70	5,695,000	66	1,936,300	53	50	57	1,103,691
New Mexico	Fine, fine med., and medium.	2,900,000	6.50	18,850,000	65	6,597,500	51	48	56	3,694,600
Texas	25% fall, 75% spring.	1,400,000	6.50	9,100,000	66	3,094,000	55	52	57	1,765,580
Oklahoma&Indian Ter	Fine, fine med., and medium.	60,000	6.5	390,000	67	128,700	48	45	55	70,785
		24,760,000	7.29	180,356,250	65.4	62,363,275	.....	.....	.....	$35,444,162
Totals	.....	38,481,000	6.82	262,543,400	59.3	106,566,652	51	47.7	55.4	$59,084,229
Pulled Wool	.....	.....	.....	41,500,000	27	30,300,000	51.75	47.5	56	16,936,000
Total Product, 1912	.....	.....	.....	304,043,400	.....	136,866,652	51.12 22.53*	47.7 20.9*	.....	$76,020,229

*Average value, unscoured.

NUMBER OF SHEEP IN THE WORLD ACCORDING TO THE MOST RECENT AVAILABLE STATISTICS AND ESTIMATES.

COUNTRY.		Number of Sheep.
NORTH AMERICA:		
United States: Continental	*52,752,887	
Noncontiguous, except Philippine Islands:		
Hawaii 76,719		
Porto Rico 6,363		
Alaska 199		
Total	83,281	
Total United States		52,836,168
Canada		2,512,650
Newfoundland		78,052
Mexico		3,424,430
Central America		124,044
Cuba		9,982
British West Indies		27,980
Dutch West Indies		22,643
Guadeloupe		11,731
		6,211,512
Total North America		59,047,680
SOUTH AMERICA:		
Argentina		77,303,517
Brazil		.....
Chile		4,224,266
Uruguay		26,286,296
Falkland Islands		724,736
Colombia		746,000
Other South America		408,327
Total South America		109,693,142
EUROPE:		
Austria-Hungary:		
Austria	2,428,586	
Hungary	7,526,783	
Bosnia-Herzegovina	2,498,854	
Total		12,454,223
Belgium		235,722
Bulgaria		8,130,997
Denmark, Iceland, and Faroe Islands		1,319,197
Finland		904,447
France		17,110,760
Germany		7,703,710
Greece		4,568,158
Italy		11,162,708
Montenegro		400,000
Netherlands		889,036
Norway		1,393,488
Portugal		3,072,998
Roumania		5,655,444
Russia in Europe		†46,989,000
Saxony		58,185
Servia		3,160,166
Spain		15,117,105
Sweden		1,010,217
Switzerland		159,727
Turkey		‡6,912,568
United Kingdom, including Isle of Man, etc		31,082,461
All other Europe		26,120
Total Europe		179,516,437
ASIA:		
British India:		
British Provinces	23,237,546	
Native States	3,321,366	
Total		26,558,912
Ceylon		96,335
Cyprus		§294,456
Japan		3,411
Philippine Islands		88,760
Russia in Asia		38,017,000
Turkey in Asia		45,000,000
Total Asia		**110,058,874

*Includes lambs. †Includes goats.

NUMBER OF SHEEP IN THE WORLD ACCORDING TO THE MOST RECENT AVAILABLE STATISTICS AND ESTIMATES—(Continued).

COUNTRY.	Number of Sheep.
AFRICA:	
Algeria	9,066,916
British East Africa	6,000,000
German East Africa	1,560,000
German South Africa	300,722
Madagascar	333,454
Rhodesia	250,182
Soudan (Anglo-Egyptian)	952,950
Tunis	615,584
Uganda Protectorate	471,297
Cape of Good Hope	19,026,884
Natal	1,068,996
Orange Free State	7,481,251
Transvaal	3,170,708
All other Africa	1,130,335
Total Africa	51,429,279
OCEANIA:	
Australia	92,742,034
New Zealand	24,269,620
Total Australasia	117,011,654
Other Oceania	15,120
Total Oceania	117,026,774
Total World	$26,872,186

‡Not including vilayets of Scutaria and Constantinople.
§One year old and over. **No data are available for China.

WOOL PRODUCTION OF THE WORLD.
From the Latest Official Returns and Estimates.

COUNTRY.	Wool.
	Pounds.
NORTH AMERICA:	
United States	302,343,400
British Provinces	11,210,000
Mexico	7,000,000
Central America and West Indies	1,000,000
Total North America	321,553,400
SOUTH AMERICA:	
Argentina	368,151,500
Brazil	1,130,000
Chile	27,745,080
Peru	9,940,000
Falkland Islands	4,324,000
Uruguay	138,332,375
All other South America reported	5,000,000
Total South America	554,622,955
EUROPE:	
United Kingdom	142,877,011
Austria-Hungary	41,600,000
France	78,000,000
Germany	25,600,000
Spain	52,000,000
Portugal	10,000,000
Greece	14,000,000
Italy	21,500,000
Russia (Europe)	320,000,000
Turkey and Balkan States	90,500,000
All other Europe	18,000,000
Total Europe	814,077,011
ASIA:	
British India	60,000,000
China	50,000,000
Russia (Asiatic)	60,000,000
Turkey (Asiatic)	90,000,000
Persia	12,146,000
All other Asia reported	1,000,000
Total Asia	273,146,000

AFRICA:	
Algeria	33,184,000
British Africa	125,000,000
Tunis	3,735,000
All other Africa reported	13,000,000
Total Africa	174,919,000
OCEANIA:	
Australia	662,845,907
New Zealand	169,915,939
Australasia	832,761,846
All other Oceania reported	100,000
Total Oceania	832,861,846
Total world	2,971,180,132

SHEEP IN MONTANA.

YEAR.	No. Sheep Assessed.	Estimated Actual Sheep.	Pounds of Wool.	Price (Cents)
1870	4,212	.....	.....	....
1871	6,454	.....	.....	....
1872	7,541	.....	.....	....
1873	10,594	.....	.....	....
1874	13,947	.....	33,194	....
1875	20,790	.....	53,487	....
1876	51,558	.....	105,982	....
1877	79,288	.....	226,274	....
1878	107,261	.....	334,200	....
1879	168,891	.....	593,108	....
1880	249,978	.....	936,710	....
1881	260,402	.....	997,394	....
1882	362,776	.....	1,445,462	....
1883	465,667	.....	1,831,767	....
1884	593,896	.....	2,157,768	....
1885	798,682	.....	2,639,319	....
1886	968,298	.....	3,949,011	....
1887	1,062,141	.....	.....	....
1888	1,153,771	.....	4,422,030	...
1889	1,180,603	.....	7,023,134	. ..
1890	1,555,116	.....	7,783,007	....
1891	1,517,753	.....	8,344,834	....
1892	1,883,840	.....	10,180,941	....
1893	2,254,527	.....	.....	....
1894	2,228,875	.....	.....	....
1895	2,605,102	.....	.....	....
1896	2,815,829	.....	.....	....
1897	3,120,834	.....	22,169,921	11.48
1898	3,146,868	.....	22,916,603	15.38
1899	3,483,151	.....	23,418,551	16.66
1900	3,703,841	.....	27,894,188	15.66
1901	4,126,331	.....	29,796,089	12.36
1902	4,568,237	.....	32,817,978	14.00
1903	4,818,884	.....	36,141,630	14.50
1904	4,138,765	5,115,532	34,500,000	15.00
1905	4,235,848	4,871,109	39,912,347	21.00
1906	4,304,333	5,103,660	37,037,549	20.00
1907	4,037,890	5,049,862	37,873,965	21.60
1908	4,173,888	5,217,360	39,130,200	15.00
1909	4,486,085	5,600,000	43,000,000	20.00
1910	4,817,492	6,000,000	43,000,000	18.00
1911	4,555,719	5,690,000	39,830,000	17.00
1912	4,311,039	5,388,798	41,000,000	20.50

MINING.

The mining industry is of so great importance to the state that it merits a carefully prepared chapter descriptive of the mineralized area and of the several mining districts. The bureau receives inquiries with reference to the total area of mineral lands and the number and acreage of mining claims, but as a rule the assessors do not report the latter and probably no one knows the total area.

The total number of mines reported by the State Mine Inspector was 278 in 1912, giving employment to 14,500 miners, and his report contains a description of the mines operated last year.

The value of the metal production was $48,358,253.00 in 1910, $46,955,287.00 in 1911, and approximately $64,000,000.00 in 1912.

The following tables give the value of the metal production by years from 1882 to 1911 and by counties for 1911:

PRODUCTION OF GOLD, SILVER, COPPER AND LEAD IN MONTANA, FROM THE YEAR 1862 TO 1911, INCLUSIVE.

Year.	Gold.	*Silver.	Copper.	Lead.	Totals.
1862 to 1881....	$200,000,000	$11,000,000	$	$	$211,000,000
1882	2,550,000	4,370,000	1,539,860	.....	8,459,860
1883	1,800,000	6,000,000	3,452,960	226,424	11,479,384
1884	2,170,000	7,000,000	5,386,500	246,326	14,802,826
1885	3,400,000	11,500,000	6,779,800	274,350	21,954,150
1886	4,422,000	13,849,000	5,761,200	494,132	24,526,332
1887	5,978,536	17,817,548	8,853,750	607,662	33,257,496
1888	4,200,253	15,790,736	15,103,946	569,160	35,664,095
1889	3,500,000	19,393,939	13,334,970	456,975	36,685,884
1890	3,300,000	20,363,636	16,630,958	964,089	43,029,827
1891	2,890,000	20,139,394	14,377,336	1,229,027	38,635,757
1892	2,891,386	22,432,323	19,105,464	990,035	45,419,208
1893	3,576,000	21,858,780	16,630,958	946,089	43,029,827
1894	3,651,410	16,575,458	17,233,718	730,551	38,191,137
1895	4,327,040	22,886,992	21,114,869	754,360	49,083,261
1896	4,380,671	20,324,877	25,356,541	670,010	50,732,099
1897	4,496,431	21,730,710	26,798,915	928,619	53,954,675
1898	5,247,913	19,159,482	26,102,616	809,056	51,319,067
1899	4,819,157	21,786,835	40,941,906	909,410	68,457,308
1900	4,736,225	18,482,211	39,827,135	701,156	63,746,727
1901	4,802,717	18,334,443	36,751,837	498,622	60,387,619
1902	4,400,095	17,662,285	24,606,038	332,749	46,961,167
1903	4,590,516	17,097,702	28,200,695	387,445	50,276,355
1904	5,097,786	18,887,227	36,410,310	195,525	60,590,848
1905	4,889,234	17,359,912	48,165,277	227,160	70,677,583
1906	4,469,014	8,027,072	56,105,288	254,390	68,855,764
1907	3,286,212	6,149,619	44,021,758	198,660	53,656,249
1908	3,057,640	5,488,785	33,220,149	193,056	42,036,710
1909	3,791,510	6,436,931	40,567,541	128,287	51,429,694
1910	3,730,486	6,567,942	36,170,686	180,677	48,358,253
1911	3,710,571	.....	.....	.....	46,955,287
Total	$318,162,803	$451,469,839	$708,578,457	$14,833,307	$1,541,580,087

*Silver coinage value to 1906. Grand total includes values of zinc in 1908, 1909, 1910 and 1911. Totals for silver, copper and lead do not include 1911.

MINERAL PRODUCTION OF MONTANA BY COUNTIES, 1911.

(By V. C. Heikes, U. S. Geological Survey).

COUNTY.	GOLD.		SILVER.	COPPER.	LEAD.	ZINC.	Total Value.
	Placers.	Deep Mines.					
			Fine Cunces	Pounds	Pounds	Pounds	
Beaverhead ...	$ 1,455	$ 43,400	102,864	137,577	830,572	.....	$ 153,946
Broadwater ...	5,123	600,519	13,387	140,558	149,276	.....	637,024
Cascade	....	2,774	99,825	5,314	861,613	.....	95,118
Chouteau	60	433,776	48,519	.....	.....	.....	459,551
Deer Lodge ...	285	66,998	73,842	7,463	.....	.....	107,352
Fergus	66	358,515	8,676	.....	17,446	75,995	368,296
Gallatin	424	.....	1	.....	.....	.....	425
Granite	2,584	136,856	350,852	16,627	80,679	.....	331,100
Jefferson	4,318	91,776	823,704	161,719	2,088,236	.....	646,843
Lewis & Clark	26,728	231,757	57,583	7,402	116,146	.....	295,156
Lincoln	3,788	5,209	15,032	.....	816,211	.....	53,693
Madison	584,948	275,441	102,357	25,533	225,416	.....	927,974
Meagher	38	89	92	10,862	12,544	.....	2,098
Missoula	20,395	14,500	2,588	.....	28,979	.....	37,571
Park	2,235	575	264	.....	29,866	.....	4,294
Powell	23,343	36,772	25,659	41,468	110,796	.....	83,883
Ravalli	2,836	854	959	7,053	24,372	.....	6,177
Sanders	....	229	870	14,938	22,150	.....	3,557
Silver Bow ...	6,175	725,730	10,258,122	272,271,171	1,017,273	43,734,150	42,741,229
Total	$684,801	$3,025,770	11,985,196	272,847,705	6,431,575	43,810,145	46,955,287

MINE PRODUCTION OF GOLD, SILVER, AND ASSOCIATED METALS IN MONTANA IN 1910 AND 1911.

Metal.	1910		1911		—Decrease +Increase	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
Gold (fine ounces)	180,462.26	$ 3,730,486	179,498.87	$ 3,710,571	— 963.39	—$ 19,915
Silver (fine ounces)	12,162,857	6,567,942	11,985,196	6,352,154	— 177,661	— 215,788
Copper (pounds)...	284,808,553	36,170,686	272,847,705	34,105,963	—11,960,848	—2,064,723
Lead (pounds).....	4,106,292	180,677	6,431,575	289,421	+ 2,325,283	+ 108,744
Zinc (pounds).....	31,638,184	1,708,462	43,810,145	2,497,178	+12,171,961	+ 788,716
Total		$48,358,253		$46,955,287		—1,402,966

Reduction Mills.

The following list of 105 mills, with the rough summary of equipment, was made as complete as it was possible to get it for 1911. Of the number given, 48 were idle, 54 were operating, and 3 were under construction or being remodeled. There were 18 mills using the amalgamation process, of which 9 were active; 27 were cyanide plants, 17 being in operation; 18 were concentration plants, 7 being active. Amalgamation and concentration methods were used in 25 mills, of which 8 were in operation; amalgamation and cyanide methods were used at 9 mills, of which 7 were active. Three mills equipped for cyanidation and concentration were all in operation. One mill to use the suphuric acid leaching process was under construction. At another plant under construction a modification of the chlorination process is to be used.

LIST OF REDUCTION MILLS IN MONTANA IN 1911, BY COUNTIES.

Name.	District.	Process.	Equipment.	Approximate Maximum Capacity Per Day.
Beaverhead County				Short Tons.
Ajax (a)	Elkhorn	Amalgamation	10 stamps	30
Dakota (a)	Polaris	Cyanidation		25
Broadwater County				
Slim Jim (b)	Backer	Amalgamation	1 stamp	1
Eclipse (a)	Backer	Concentration	Crusher, 2 Huntington mills, 1 Wilfley table, 1 vanner.	20
East Pacific (a)	Beaver	Amalgamation and concentration	1 crusher, 2 roller mills, 3 jigs, 1 vanner, 1 Wilfley table.	75
Eclipse Argo (a)	Beaver	Concentration	Crusher, 2 sets of rolls, 3 Hartz jigs, 2 Wilfley tables.	25
Cascade County				
Morning Star (a)	Montana	Concentration	Crusher, 1 set of rolls, jigs	20
I. X. L. and Eureka (b)	Montana	Cyanidation	10 stamps	25
Broadwater (a)	Montana	Concentration	Crusher and tables	30
Barker (b)	Montana	Concentration	Crusher and tables	50
Boston-Montana (b)	Montana	Concentration	18 Blake crushers, 8 stamps, 36 rolls, 88 jigs, 75 shaking tables, and 66 vanners.	3,000
Chouteau County				
Ruby Gulch (b)	Little Rockies	Cyanidation	Crusher, 2 sets of rolls, 13 tanks (capacity 2,320 tons)	300
August (b)	Little Rockies	Cyanidation	1 crusher, 2 rolls, 9 tanks, (capacity 1,020 tons)	100
Deer Lodge County.				
Cable (a)	Georgetown	Amalgamation	30 stamps	100
Southern Cross (b)	Georgetown	Cyanidation	Stamps, tanks, Dorr classifiers and thickeners.	100
Gold Coin (b)	Georgetown	Amalgamation	30 stamps	200
Victoria (b)	Georgetown	Cyanidation		
Washoe	Georgetown	Concentration	24 Blake crushers, 32 rolls, 24 Huntington mills, 280 tables, 528 jigs.	10,300
Fergus County.				
Kendall (b)	North Moccasin	Cyanidation	Crusher, rolls, 14 tanks (capacity 2,352 tons).	300
Barnes King (a)	North Moccasin	Cyanidation	Crushers and tanks	200
Cumberland (b)	Warm Springs	Cyanidation	1 crusher, 1 set rolls, 10 tanks, (capacity 230 tons).	150
Gold Reef (b)	Warm Springs	Cyanidation	1 crusher, 6 tanks, (capacity 400 tons).	165
Rhein (b)	Warm Springs	Cyanidation	Crushers and tanks	150
Maginnis (b)	Warm Springs	Concentration, cyanidation	Crusher, Huntington mill, 10 stamps, 6 cyanide tanks (capacity 280 tons, Diester tables, agitation.	25
Granite County.				
Fourth of July (a)	First Chance	Amalgamation, concentration.	10 stamps, 2 Wilfley tables, 2 Woodbury and 1 Frue vanner.	30
Shamrock (a)	First Chance	Amalgamation, concentration.	20 stamps	60
Henderson (a)	First Chance	Amalgamation, concentration.	20 stamps, plates, Wilfley tables, and buddle.	60
Hope (a)	Flint Creek	Amalgamation, concentration.	1 Blake crusher, 3 tables, 10 stamps.	25
Royal Gold (a)	Flint Creek	Amalgamation, concentration.	10 stamps	30
Granite-Bimetallic (a)	Flint Creek	Amalgamation, concentration, chlorination.	Crushers, 100 stamps, tube mill, Wilfley tables, and 9 tanks.	200
Coyote (a)	Flint Creek	Cyanidation	3 stamps	10
American Flag (a)	Red Lion	Amalgamation, cyanidation.	Plates and tanks	50
Doherty (b) (custom mill)	Red Lion	Amalgamation, cyanidation.	Stamps, plates and tanks	40
Red Lion (b)	Red Lion	Amalgamation, cyanidation.	10 stamps, plates, and tanks	30
Sunday (b)	South Boulder	Cyanidation	25-ton cyanide plant, 3½-foot Huntington mill.	5

LIST OF REDUCTION MILLS IN MONTANA IN 1911, BY COUNTIES—(Continued)

Name.	District.	Process.	Equipment.	Approximate Maximum Capacity Per Day.
North Star (a).....	South Boulder	Sulphuric acid leaching plant.	2 crushers, 2 roller mills, 4 leaching tanks.	100
Gold Reef (a)	South Boulder	Cyanidation.....	6 stamps and 40-ton cyanide plant.	30
Mount Royal (a)...	South Boulder	Cyanidation.....	20 stamps	50
Crescent (b)	South Boulder	Amalgamation, cyanidation.	20 stamps, plates and Dorr classifiers.	60
Alps (a)	Alps	Cyanidation...	10 stamps	30
Jefferson County				
Ruby (b)	Cataract	Amalgamation, concentration.	Crusher, Wilfley tables, tanks.	30
Basin Reduction Works (b)	Cataract	Concentration	Crushers and tables	1,500
Comet (a)	Cataract	Concentration	Crushers and tables	100
Corbin (a)	Colorado	Concentration	Crusher and 2 tables	100
Elkhorn (b)	Elkhorn	Concentration	Crusher, 20 stamps, 2 tables, Frue vanners.	140
Golden Curry (a)..	Elkhorn	Cyanidation.....	Crusher and tanks	100
Last Hope (a)	Mitchell	Amalgamation, concentration.	5 stamps and 1 table	25
Gold Crown (a)....	Lump Gulch	Concentration	Rolls, 2 sets jigs, and table.	20
Frohner (c).....	Lump Gulch	Concentration	Crushers and tables	30
Golden Sunlight (a)	Whitehall	Cyanidation.....	.....	50
Lewis and Clark County.				
Strawberry (b) ...	Bald Butte	Amalgamation	10 stamps	30
Bald Butte (a) ...	Bald Butte	Amalgamation, concentration.	40 stamps	100
Stemple, e. a. (b)..	Gould	Amalgamation, cyanidation.	2 crushers, 30 stamps, 10 tanks (capacity 100 tons).	100
Hubbard (b)	Gould	Amalgamation, cyanidation.	10 stamps	100
May & Victor (b)..	Greenhorn	Amalgamation, cyanidation.	10 stamps	30
Arrow Head and Old Dominion (a)	Helena	Amalgamation, concentration.	2 stamps	2
Northwestern Metals Co. (c)...	Helena	Chlorination (dry).	Crusher, rolls, and 3 tube mills	40
Cruse Bald Mt. (b)	Ottawa	Cyanidation.....	20 stamps	50
Empire (a)	Ottawa	Amalgamation, cyanidation.	60 stamps	500
Drumlummon (b)..	Ottawa	Amalgamation, concentration, cyanidation.	60 stamps, Dorr classifier and thickeners.	400
August Eck (b) ...	Ottawa	Cyanidation.....	Tailings plant—2 cyanide tanks (75 tons each).	25
F. Aagaard (a) ...	Ottawa	Cyanidation.....	Tailings plant—6 sand tanks, 4 solution tanks.	30
Wolfram (a)	Ottawa	Cyanidation.....	Tailings plant—tanks	25
G. Slater (b)	Ottawa	Cyanidation.....	Tailings plant—tanks	25
Gloster (b)	Ottawa	Cyanidation.....	60 stamps	200
Maly (a) (on Day Creek)..	Ottawa	Cyanidation.....	Three 60-ton tanks	20
Klondike (a)	Stemple	Amalgamation	3 stamps	2
New Year (b)	Stemple	Amalgamation . ..	.....	25
Whitlatch (b)	Unionville	Amalgamation, concentration.	10 stamps	30
Spring Hill (b)....	Unionville	Cyanidation.....	.....	70
Twentieth Century (a)	Poorman	Amalgamation	5 stamps	20
Lincoln County.				
Snowshoe (a)	Libby	Concentration	Crusher, rolls, jigs and Wilfley tables.	400
Blacktail (a)	Libby	Amalgamation	10 stamps	10
Madison County.				
U. S. Grant (b)....	Alder Gulch	Amalgamation	15 stamps	45
Prospect and Hidden Treasure (b)	Alder Gulch	Amalgamation	10 stamps	30
Gleason (b)	Lower Hot Springs	Amalgamation,	.....	25

LIST OF REDUCTION MILLS IN MONTANA IN 1911, BY COUNTIES—(Continued)

Name.	District.	Process.	Equipment.	Approximate Maximum Capacity Per Day.
Boss Tweed and Clipper (a)	Mineral Hill	Amalgamation, concentration.	Crusher, 15 stamps, Willfley table, and Frue vanner.	50
Ben Harrison Fraction (a)	Mineral Hill	Amalgamation, concentration.	4 stamps	12
Garnet (a)	Mineral Hill	Amalgamation, concentration.	20 stamps and 5 Frue vanners	60
Strawberry (a) (custom)	Mineral Hill	Amalgamation, concentration.	10 stamps and 3 tables	25
Gold Coin (c)	Rabbit	Amalgamation, concentration.	5 stamps, 1 Wilfley table, 1 Frue vanner.	30
Fairview (b)	Sheridan	Amalgamation	5 stamps and plates	25
Gladstone (a)	Sheridan	Amalgamation, concentration.	10 stamps	30
Noble (b)	Sheridan	Amalgamation		30
Iron Rod and Hudson (a)	Silver Star	Amalgamation, cyanidation.	15 stamps	50
Green Campell (b)	Silver Star	Concentration	25-ton Huntington mill	100
Ecston-Pacific (a).	Summit	Concentration and cyanidation for tailings.	10 stamps and Dorr classifiers..	25
Shafter (b)	Summit	Amalgamation, concentration, cyanidation.	Crusher, 5 stamps, 2 Frue vanners, 3 tanks.	15
Apex (a)	Summit	Amalgamation, concentration.	10 stamps	20
Monitor and Revenue (a)	Upper Hot Springs	Cyanidation	Crushers and tanks	75
George McKee (b).	Washington Gulch.	Amalgamation, concentration.	5 stamps	15
Black Hawk (a)...	Washington Gulch.	Amalgamation, concentration.	10 stamps	30
Meagher County.				
Crown Point (a)...	Musselshell	Amalgamation	1 Dodge stamp and 5-foot Huntington mill.	20
Missoula County.				
Iron Mountain Tunnel (b)	Iron Mountain	Concentration	Crusher, 6 Wilfley tables	300
Nine Mile (a)	Nine Mile	Amalgamation	Crusher and 20 stamps	75
San Martina (b)...	Nine Mile	Amalgamation	5 stamps	15
Deer Creek (b)....	St. Regis	Amalgamation, concentration.	Crusher, 3 Tremain mills, and 3 Wilfley tables.	20
Gold Chrome (a)...	St. Regis	Amalgamation, concentration.	10 stamps, one 22-foot tube mill, 1 Johnson table.	150
Powell County.				
Victory (a)	Ophir	Amalgamation, concentration.	10-foot Lane mill, and 6 Frue vanners.	20
Mutual (b)	Washington Gulch.	Amalgamation, concentration.	5 stamps and Frune vanners...	20
Hansmeier (a)	Washington Gulch.	Amalgamation	5 stamps	24
Kineo (b)	Zozell	Concentration	Crusher, 2 rolls and jigs	50
Sanders County				
Shamrock (b)	Prospect Creek	Amalgamation, concentration.	5 stamps	15
Silver Bow County				
Gold Hill (a)	Divide Creek	Cyanidation	Crusher, 2 Huntington mills, 9 tanks (capacity 100 tons).	40
Murphy (a)	Highland	Amalgamation	5 stamps	18
Pittsmont (b)	Summit Valley	Concentration	2 crushers, 2 Chilian mills, 4 jigs, 6 Cravens, and 16 Overstrom tables.	350

(a) Active in 1911.
(b) Idle in 1911.
(c) Under construction in 1911.

Production of Copper $792,000,000

Grand Prize for Mining Industry.

Production of Gold and Silver $790,000,000

METAL PRODUCTION, 1912.

The following report of the metal production of Montana for the year 1912 is from the United States Geological Survey Press Bulletin, January 7, 1913:

MONTANA METAL PRODUCTION IN 1912—LARGE INCREASE IN COPPER PRODUCTION.

As a result of the increased prices of metals and the greater production of copper particularly, the total value of the metal output of Montana in 1912 was close to $64,000,000, according to preliminary estimates by V. C. Heikes, of the United States Geological Survey. This represents an increase of nearly 36 per cent in value over the 1911 output and is the most valuable production since that of 1906. About 79 per cent of this value came from copper alone, about 12 per cent from silver, nearly 6 per cent from gold, and nearly 3 per cent from zinc.

An estimated decrease of over 5 per cent in gold production brought the output of 1912 down to about $3,500,000. This was probably due to a diminished yield of mill bullion, especially in the Little Rockies district, formerly in Chouteau County but now in Blaine County. The gold output from placer bullion slightly increased, being sustained by six operating dredges. The four boats at Ruby had a successful season, and the Kansas City plant, in Missoula County, and the Magpie, in Lewis and Clark County, were active.

There was also an increase of about 5 per cent in silver, from nearly 12,000,000 ounces in 1911 to about 12,500,000 ounces in 1912. This was to be credited to Butte copper ore. The increase of 7.5 cents a fine ounce in the average price of silver meant a difference of nearly a million dollars in the value of the production.

Instead of curtailing the output of copper, as in 1911, when nearly 273,000,000 pounds were marketed, the production of 1912 was brought up to about 310,000,000 pounds, or nearly that of the year 1909. This is an increase of about 14 per cent, due partly to the rise in price of the metal, which averaged somewhat over 16 cents a pound, against 12.5 cents in 1911. Although Montana recorded a larger copper output, it retained second place among the States in 1912, as Arizona had a much greater increase. The copper mines at Butte, especially the Anaconda, East Butte, and Tuolumne mines, made better showings. The smelting plants at Anaconda and Great Falls were not only more active than in recent years, but plans were made and work started to entirely reconstruct the Great Falls plant. The Anaconda mines were producing at the rate of 26,000,000 pounds of copper a month, and the East Butte at somewhat over 1,000,000 pounds. At the latter plant capacity was increased by lengthening the furnaces. The cost of mining at Butte was lessened by the use of electric power.

There was no important change in lead production in 1912 from the output of nearly 6,500,000 pounds in 1911. The East Helena lead plant was active but worked largely on lead ore from other States.

A decrease of about 41 per cent, to an estimated production of 25,520,000 pounds for 1912, was shown in the spelter output, but interesting work was done in metallurgical treatment and construction. The Elm Orlu mine, the concentrator of which was lost by fire in 1911, produced no zinc, although experiments were made in direct smelting of the ore, both at Butte and in Germany. Improvements were made at the Butte & Superior mine, which somewhat retarded shipments. A new surface plant and a 500-ton unit of a concentration mill were constructed. The latter began operations in June, using an oil flotation process in connection with concentration. Small shipments of zinc concentrates were made from Basin, in Jefferson County, and of zinc ore from Troy, in Lincoln County. Work at Georgetown, in Deer Lodge County, was stimulated by the building of the railroad into the district, and construction was continued on the road to Radersburg, in Broadwater County.

COAL.

According to reports of the U. S. Geological Survey the coal fields of Montana include an area of 34,067 square miles underlain by coal beds more than two feet in thickness and the coal is lignite, bituminous and subbituminous in character.

In estimating the tonnage of the various fields the following rules were observed:

A square mile of lignite coal one foot thick contains 27,878,400 cubic feet that with a specific gravity of 1.3 weighs 1,132,560 short tons.

A lignite bed one foot thick and one acre in extent contains approximately 1,800 tons.

Not all of the fields have been sufficiently examined to give definite figures but reports of the U. S. G. S. give estimates on five fields in eastern Montana between the surface and a depth of 500 feet.

Culbertson field 16,911,752,000 short tons with 9,395,400,000 recoverable. Fort Benton field 33,235,200,000 short tons with 18,464,000,000 recoverable. Sidney field 23,329,830,000 short tons with 12,500,000,000 recoverable. Baker field 1,596,054,000 short tons of minable coal in beds of not less than 36 inches. If all lignite beds having a thickness of 14 inches or more are taken into consideration a moderate estimate for the Baker field would be 2,394,071,000 tons. The contents of the Bull Mountain field, not allowing for waste, is 4,797,200,000 short tons of coal.

In 1910 the estimated original supply for the State was 303,060,000,000 short tons with a total exhaustion of 48,000,000 tons to close of 1910, leaving an estimated available supply of 303,012,000,000 short tons. The coal deposits of Montana with a liberal estimate for loss in mining will in time become one of its greatest sources of weath.

COAL PRODUCTION BY COUNTIES FOR THE YEARS 1911 AND 1912.

COUNTY.	TONS.		VALUE.	
	1911	1912	1911	1912
Blaine	.....	5,720	$	$ 16,745
Carbon	1,226,774	1,267,585	2,100,784	2,362,695
Cascade	948,912	850,858	1,482,578	1,338,975
Chouteau	14,067	10,086	23,771	24,223
Custer	5,038	4,527	14,000	13,031
Fergus	6,666	4,947	14,689	11,867
Gallatin	10,801	3,687	19,279	5,588
Hill	.....	16,686	.....	28,864
Musselshelll	643,646	933,485	1,126,384	1,680,273
Park	54,759	45,396	117,658	105,906
Valley	2,742	820	5,482	1,927
Total	2,913,406	3,143,799	$4,904,620	$5,600,097

PRODUCTION OF COAL FROM 1880 TO 1912.
(SHORT TONS.)

Year.	Quantity.	Year.	Quantity.	Year.	Quantity.	Year.	Quantity.
1880.....	224	1889.....	363,301	1898.....	1,497,803	1907.....	2,030,564
1881.....	5,000	1890.....	517,477	1899.....	1,496,451	1908.....	1,978,347
1882.....	10,000	1891.....	541,861	1900.....	1,661,775	1909.....	2,541,679
1883.....	19,795	1892.....	564,648	1901.....	1,442,569	1910.....	2,970,246
1884.....	80,376	1893.....	892,309	1902.....	1,502,115	1911.....	2,913,406
1885.....	86,440	1894.....	927,395	1903.....	1,514,538	1912.....	3,143,799
1886.....	49,846	1895.....	1,504,108	1904.....	1,471,504		
1887.....	10,202	1896.....	1,543,445	1905.....	1,743,771		
1888.....	41,467	1897.....	1,647,882	1906.....	1,502,200		

PHOSPHATE.

Montana has some of the best phosphate fields in the world according to reports of the U. S. Geological Survey. More than two years ago phosphate deposits were discovered near Melrose and after examination and surveys were made 34,000 acres of phosphate lands were withdrawn from settlement. Last year the work was continued resulting in the withdrawal of thousands of acres extending the area north and west. Phosphate rock has been discovered in the counties of Beaverhead, Deer Lodge, Silver Bow, Powell and Granite.

The following description of the rock is given by the U. S. G. S.:

"The rock phosphate itself can usually be recognized in the field by its oolitic texture—that is, by the fact that it is a mass of grains like small shot cemented together. The rock varies in color from coaly black—in some places it was originally mistaken for coal—to dull gray or iron stained. Most of the phosphate rock emits, when broken or struck, a fetid odor, which is supposed to be characteristic of these minerals. Its "float" is characteristically marked with a thin film of bluish white or bonelike coating, resembling chalcedony."

The discovery of these phosphate fields will add another industry to the vast resources of Montana. It has been suggested that their nearness to large copper smelters is of great importance, for the large quantities of sulphuric acid now going to waste can be utilized in the reduction of phosphate rock.

No date has been fixed for opening the phosphate lands for location or purchase and their disposal will probably be determined by an Act of Congress providing the manner in which these lands may be acquired.

PRECIOUS STONES.

The following report on precious stones in Montana is taken in part from "Gems and Precious Stones in 1911," by Douglas B. Sterrett of the U. S. Geological Survey:

SAPPHIRE.

"A large production of sapphires was reported from Montana during 1911. The output came from the Yogo blue sapphire mines in Fergus County; Rock Creek, in Granite County; Dry Cottonwood, in Deer Lodge County; and the Missouri River placers east of Helena. The mines operating in Fergus County were the New Mine Sapphire Syndicate and the Yogo American Sapphire Co. These companies obtain sapphires by mining, disintegrating and washing a rock matrix. The sapphires obtained here are nearly all blue; those from the other localities are varicolored, and fine blue stones are rare. The Yogo American Sapphire Co., commenced operations in July, 1909, but as no report was received by the Survey the output of this

company was not included in the tables of production for the years 1909 and 1910. Mr. H. O. Chowen, president of the company, has supplied statistics of production for the last three years, and this total output is given combined with that of other producers for 1911 in the subsequent table. Consequently the figures given for 1911 are a little high, but the great increase over 1910 is also in a large part due to increased productions from other mines.

"The output of the New Mine Sapphire Syndicate was also greater than in 1910. Some fine sapphires are reported to have been found at this mine in 1911, two of which were exceptionally good. One of these weighed 3½ carats, and the other 2½ carats and both had a beautiful cornflower-blue color. The summer season, in which the washing is done, was better than in 1910, and no cloudbursts occured to damage the ditch on which water for washing is dependent. The water supply was plentiful and together with the new depositing floors laid down in the previous summer added to the increased production of gems.

"The sapphires mined from other localities mentioned all occur in placer gravel deposits. On Dry Cottonwood Creek some have been mined by dredging, and one dredge was operated by the Consolidated Gold & Sapphire Mining Co., of Butte, in 1911. The American Gem Mining Syndicate works its placers in Granite County by hydraulics, and sluicing. The few sapphires obtained from deposits of Missouri River were found during gold placer mining.

"The production of sapphires in 1911, including those mined by the Yogo American Sapphire Co., in 1909 and 1910, amounted to about 88,477 ounces, of which probably about 86,000 ounces were culls for watch jewels, meter bearings, and other mechanical purposes. There were nearly 384,000 carats of varicolored sapphires of suitable size and quality for gems. The total valuation, in part estimated, placed on the production is $215,313."

AGATE.

"Moss agate and mocha stone of fine quality occur in Montana. The agates have been found chiefly on the west side of Yellowstone River from the Dakota line up to and (reported) above Yellowstone Park. They range back from the river over many miles of country, where they are gathered by the ranchers and sheep herders. The agates are distributed over the surface of the ground, in the gravel along creek and river beds, and over some of the grass-covered buttes. The ones collected all lie at the surface or only partly buried. They occur in pebbles, cobbles, and in rough masses ranging from the size of a hazelnut to pieces weighing 12 pounds. Chemical tests made on a number of the black and reddish-brown spots broken from rough specimens showed the presence of both manganese and iron, confirming the generally accepted idea as to the nature of the dendrites in mocha stone.

"The rough specimens of agate examined consist of fragrants and a chipped pebble more than 2 inches thick. The rounded form of the pebble may be due in part to the shape of the cavity in which the agate was deposited and in part to attrition during transportation along with the associated gravels. The interior of the pebble and the fragments of agate consist of translucent gray to blue-gray chalcedony. Some of it shows a banded structure, and some an even texture. Black and brown dendritic spots are scattered irregularly through the agate and in places there are seams and irregular patches of the sale color. Reddish-brown, red, and bright-red dendrites, banding, and other markings also occur in the agates."

"The gems cut from the Montana moss agate or mocha stone command good prices, bringing anywhere from $1 to $200 or $300 apiece. Some of the smaller stones suitable for stick pins, if the mossy or fern-like patterns are particularly delicate and beautiful, bring $25 apiece. Large quantities of agate are cut which yield less attractive gems, and stones as fine as those described above are rare. The value of such gems as have been described lies in the fact that they can not be duplicated."

JASPER.

"Specimen of Montana jasper have been furnished by Mr. J. H. Mosher, of Glendive. One variety is composed of dark-yellow jasper, in which are turtle-back markings of gray chalcedony and a little metallic hematite with a few patches of bright-red jasper scattered through the specimen and in a broad band along one side of it. The pattern and colors displayed by a gem cut from this material are very pretty. Another variety which Mr. Mosher calls mahogany jasper has a dark-reddish mahogany color, with peculiar patches and irregular streaks of darker color resembling the grain of wood."

During the State Fair of 1912, J. H. Mosher, of Glendive, had on exhibition a fine collection of mocha agate and mocha jasper stones from Dawson county. The collection consisted of about 1,000 stones and at least one-half of them were gems of high quality ranging in value from $25 to $300.

The best specimens are found in the vicinity of Glendive, Miles City and Billings.

MANUFACTURING.

According to the 13th census Montana had 677 manufacturing establishments operating in 1909 which gave employment to an average of 13,694 persons and during the year paid $12,955,000 in salaries and wages and $49,180,000 for materials. Copper refining and smelting was, by far, the most important industry in the state, but the statistics are not shown in the census, in order toa void disclosing the operations of individual companies. These statistics are included in the last item "All Other Industries."

Lumbering is second in importance, and that industry gave employment to an average of 3,106 wage earners and the value of its products amounted to $6,334,000. For the year 1912 the State Forester estimates that the total cut of timber was 275,000,000 board feet, tie timber 20,000,000 feet, and mining timber 15,000,000 feet. The above estimate inludes 74,200,000 feet of lumber cut from the national forests, of which 55,911,000 feet was cut under sale and 18,289,000 feet under free use. Montana is the leading state in the production of larch lumber.

Car and shop construction does not include repairs made at roundhouses. The industry gave employment to an average of 1,913 wage earners, and the value of its products was $2,811,000.

Malt liquors gave employment to 246 wage earners and had a production worth $2,440,000. Measured by value added by manufacture this industry was second in importance to the lumber industry.

There were 12 flour mills reported with products valued at $2,175,000.

In 1009 there were 135 printing and publishing establishments with an aggregate circulation per issue of 246,798 publications. The number of newspapers in the state increased to 156 in 1912.

The value of slaughtering and meat packing products was $2,054,000. Practically all of the products were sold as fresh meat.

In addition ot the industries given in the table there were 13 others which had a value of products in excess of $100,000. The beet sugar and cement factories are treated in other parts of this report. The state produced artificial stone valued at $223,000, dairy products, $418,920, and gas $189,912.

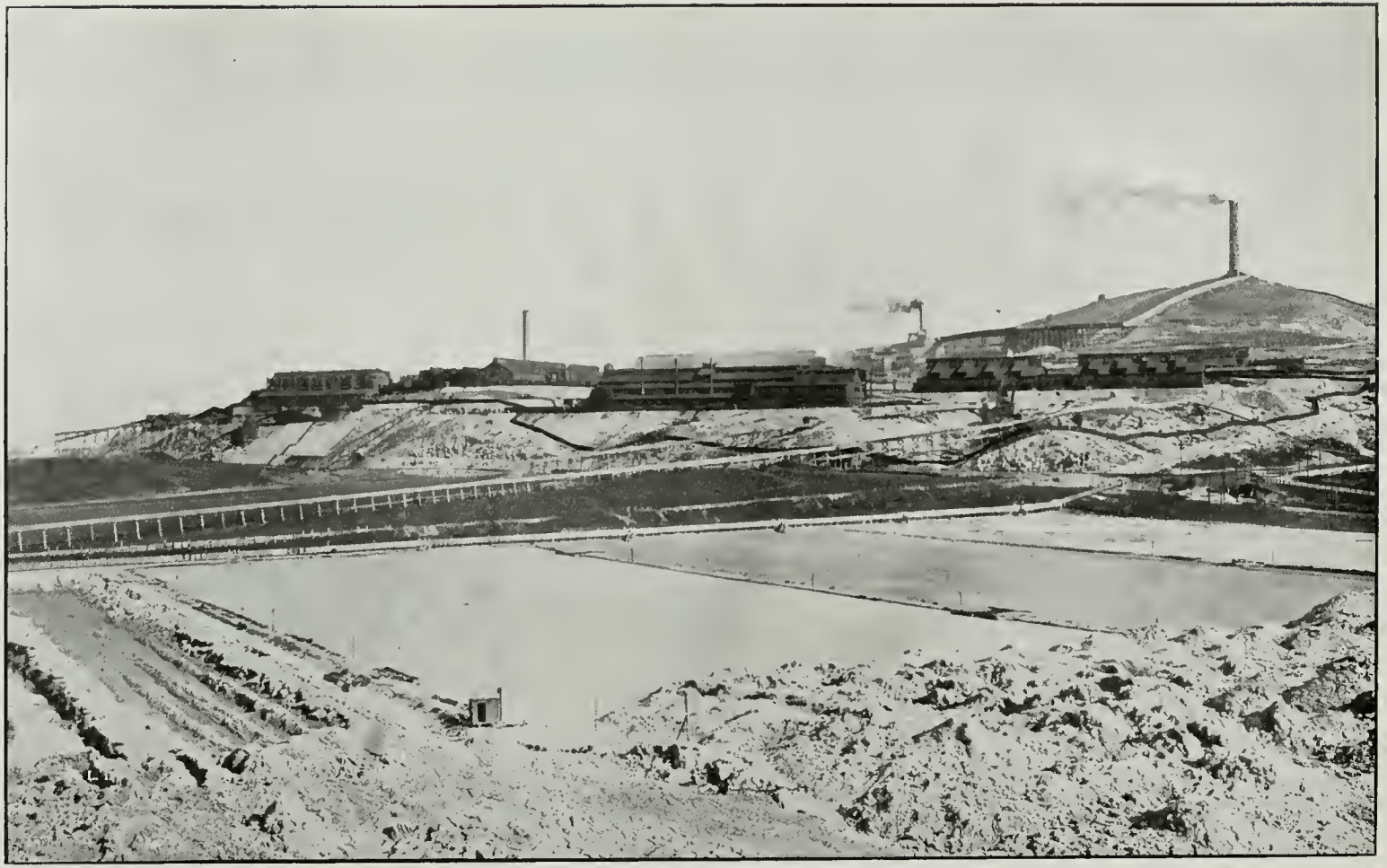
The above statistics are confined to manufacturing establishments conducted under the factory system as distinguished from the neighborhood, hand and building industries or those with a product whose value was less than $500.

No state can offer better opportunities for investment in the manufacturing industries. Meat packing must be developed in Montana or the consumer will continue to pay the expenses of transportation to and from eastern packing houses on this important food supply. Many thousands of carloads of cattle, sheep and hogs are annually shipped to eastern markets from Montana where they are slaughtered and a large per cent of the product is shipped back to Montana. Every article of clothing worn in Montana is imported, and yet in 1912 we shipped 31,175,000 pounds of wool to eastern markets. Splendid openings await the installation of commercial canning plants, cereal mills, creameries, cheese factories and other industries. We have high grade raw material in large quantities, an abundance of cheap power and a good market.

MONTANA MANUFACTURERS.
(Compiled from the Thirteenth Census.)

	Number and Amount.			Per Cent of Increase.	
	1909	1904	1899	1904–1909	1899–1904
Number of Establishments	677	382	395	77.2	—3.3
Persons engaged in manufactures	13,694	10,196	.....	34.3	....
Proprietors and firm members	659	334	.....	97.3	....
Salaried employes	1,380	905	508	52.5	78.1
Wage earners (average No.)	11,655	8,957	9,854	30.1	—9.1
Primary horse-power	90,402	46,736	43,679	93.4	7.0
Capital	$44,588,000	$52,590,000	$38,225,000	—15.2	37.6
Expenses	66,830,000	55,140,000	39,817,000	21.2	38.5
Services	12,955,000	10,153,000	8,163,000	27.5	24.4
Salaries	2,054,000	1,506,000	786,000	36.4	91.6
Wages	10,901,000	8,652,000	7,377,000	26.0	17.3
Materials	49,180,000	40,930,000	30,068,000	20.2	36.1
Miscellaneous	4,695,000	4,052,000	1,586,000	15.8	155.5
Value of products	73,272,000	66,415,000	52,745,000	10.3	25.9
Value added by manufacturer	24,092,000	25,485,000	22,677,000	—5.5	12.4

Boston & Montana Smelter at Great Falls.



The Washoe Smelter at Anaconda. The Largest in the World.

MONTANA MANUFACTURERS—(Continued).

INDUSTRY.	Number of Establishments.	Wage Earners.		Value of Products.		Value Added by Manufacture.		Primary Horse-Power.
		Average Number.	Per Cent Distribution.	Amount.	Per Cent Distribution.	Amount.	Per Cent Distribution.	
Lumber and timber products	155	3,106	26.6	$ 6,334,000	8.6	$ 4,469,000	18.5	14,337
Car and general shop construction and repairs by steam railroad companies	12	1,913	16.4	2,811,000	3.8	1,725,000	7.2	2,670
Liquors, malt	21	246	2.1	2,440,000	3.2	1,838,000	7.6	2,472
Flour mill and grist mill products	12	105	0.9	2,175,000	3.0	482,000	2.0	2,313
Printing and publishing	135	691	5.9	2,111,000	2.9	1,708,000	7.1	679
Slaughtering and meat packing	9	105	0.9	2,054,000	2.8	273,000	1.1	316
Bread and other bakery products	71	214	1.8	1,096,000	1.5	478,000	2.0	109
Foundry and machine shop products	14	316	2.7	986,000	1.3	605,000	2.5	741
Brick and tile	21	189	1.6	371,000	0.5	288,000	1.2	1,135
Tobacco manufactures	53	91	0.8	320,000	0.4	188,000	0.8	....
Marble and stone work	21	78	0.7	230,000	0.3	173,000	0.7	123
Leather goods	16	36	0.3	192,000	0.3	108,000	0.4	10
Copper, tin and sheet iron products	9	31	0.3	137,000	0.2	72,000	0.3	5
All other industries	128	1,534	38.9	52,015,000	71.0	11,685,000	48.5	65,492
All Industries	677	11,655	100.0	$73,272,000	100.0	$24,092,000	100.0	90,402

In addition to the industries presented separately there were thirteen others in 1909, each with products amounting to more than $100,000, including beet sugar, smelting and refining lead and smelting and refining copper. These items appear in the table under "all other industries."

MONTANA MANUFACTURES—1909.

(*Cities of more than 10,000 inhabitants.)

City.	Capital.	Total Expenses.	Cost of Material.	Value Added by Manufacture.	Value of Products.
Anaconda	$ 489,381	$ 512,639	$157,273	$ 433,759	$ 591,032
Billings	950,501	1,177,725	764,649	478,536	1,243,185
Butte	1,899,366	2,082,558	919,971	1,543,809	2,463,780
Helena	1,980,526	1,175,574	492,827	809,898	1,302,725
Missoula	912,570	1,024,394	403,316	769,120	1,171,436

*Statistics from Great Falls not given in U. S. Census Report from which this table is compiled.

THREE FORKS PORTLAND CEMENT.

The cement factory of the Three Forks Portland Cement Company is located at Trident in Gallatin county on the east bank of the river just below the point where the Missouri is formed by the union of the Gallatin, Madison and Jefferson rivers.

The town has electric lights, a water system, a sewer system with sewer disposal plant and cement sidewalks. The factory, depot, business houses and residences are cement structures forming a beautiful little white village on a level site between the river and the hills. Recently there has been added to the plant two blending mills and a stock house with a storage capacity of 40,000 barrels.

The crusher house is located at the base of the foothills that comprise enormous deposits of hydraulic limestone. A side track has been constructed along the quarry and a locomotive hauls the cars from the workings to the mill. The material is broken down with dynamite and loaded with two steam shovels on ore cars that automatically deposit their freight into the chute above the number nine crusher.

The product is of a superior quality that shows after being set under water a tensile strength varying from 600 to 900 pounds.

The following is a description of the equipment and the operation of the plant: The mill has two gyratory crushers, one number 5 and one number 9. The number 9 crusher is capable of handling rock up to 24 inches in thickness. After the material comes from the large crusher the coarser blocks are passed through the number 5 crusher where they are reduced sufficiently to pass through a two-inch mesh before being conveyed to the blending bins. From the crusher house the material goes to the sampling mill where a sample of all the material going into all the bins is taken. From this sample an analysis is made, and from the analysis the chemist figures the proportions in which the rocks are to be mixed. After the rocks have been sampled the material is stored in large bins from which it is drawn on a belt conveyor and weighed in the proper proportions. It is then taken to the dryer where all of the moisture is extracted. The dryer is a tube nine feet in diameter and ninety feet in length, placed in a horizontal position on idlers with a slope of one-half inch to the foot. The rock is brought in at the upper end of this tube and produced gas is blown in at the lower end. The tube makes three revolutions per minute causing the material to roll slowly toward the lower end and out. When the material comes from the dryer, it is elevated into the mill

building and runs into bins from which it is fed into the ball and tube mills. The plant has five ball mills and four tube mills. Three ball mills and two tube mills are use for grinding the raw material, and two each are used for grinding the finished product. From the tube mills the raw material comes in the form of a fine powder, 88% of which will pass a 100 mesh screen. This material is conveyed over the run into the rotary kilns, which are nine and one-half feet in diameter at the lower end and nine feet in diameter at the upper end and are 140 feet long. These cylinders are also placed in a horizontal position with an incline of one-half inch to the foot, away from the feed end. Their speed revolution is approximately three times per minute. A powdered coal, which has been previously dried in a Crummer's coal dryer and ground in a Fuller grinding mill to a fine powder, is blown into the kilns at the lower end with a blast of air, part of which is taken from the hot clinker. This coal ignites instantly upon entering the furnace and burns with a flame similar to that of gas and raises the interior of the kiln to a temperature varying from 2,500 to 3,000 degrees Fahrenheit. This fuses the raw material into a backish clinker. The clinker is taken from the kilns and cooled by being passed through a cylinder which is eight feet in diameter and 60 feet long. This cooler also has a slope of one-half inch to the foot away from the feed end and revolves slowly. A draft is generated through the cooler by means of a stack which carries off the heated gases and brings the clinker to the atmospheric temperature. From the cooler the clinker is taken back and re-ground in the ball and tube mills which reduce it to a very fine powder. This finished product is cement. The cement is carried to the stock house and stored for shipment. The capacity of the mill is 1,500 barrels per day and up to date the company has produced at Three Forks about 800,000 barrels of cement. The company employs 135 men for actual mill work and has a pay-roll of $12,000 per month.

OIL-MIXED PORTLAND CEMENT CONCRETE.

The office of Public Roads of the U. S. Department of Agriculture has issued Bulletin No. 46 giving information concerning oil-mixed concrete for water-proof and damp-proof purposes. A public patent has been granted for the process, and any one is at liberty to use it without the payment of royalties. Oil-mixed concrete is made in the same manner as ordinary concrete with oil as an additional ingredient, and requires about 50 per cent longer time to set hard than the plain concrete.

Method of Making.

For most purposes where damp-proofing is required 5 per cent of oil based on the weight of cement in the mixture is all that is necessary. A bag of cement weighs 94 pounds, and consequently for each bag of cement used in the mixture, 4.7 pounds or about 2½ quarts of oil are used.

Let it be supposed that a batch of concrete requiring two bags of cement is to be mixed in the proportions of 1 part of cement to 2 parts of sand to 4 parts of broken stone or gravel, together with 5 per cent oil.

Four cubic feet of sand are first measured out in a bottomless box 12 inches deep and 2 feet on each side. On top of the sand is spread the cement and these materials are mixed together until they appear to be of uniform color. Water is then added to the mixture and the mass again mixed to a mortar of mushy consistency. Five quarts of oil are then measured out and added to the mortar, and the mass again turned until there is no trace of oil visible on the surface of the mortar. Particular care should be taken to continue the mixing until the oil is thoroughly incorporated in the mixture. The oil-mixed mortar is then combined with the stone or gravel previously moistened and the mass is again turned until all of the stone is thoroughly coated with the mortar and the mass is uniformly mixed throughout. Should only oil-mixed mortar be desired, the process is similar to that above described except that no stone is added.

In a machine mixer the cement, sand and water are first mixed to a mortar when alternate batches of oil and stone are added until the required quantity of oil is mixed, and then the remainder of the stone is added and mixed.

Uses.

All of the laboratory and service tests thus far made on oil-mixed mortars and concretes are indicative of a wide future usefulness for these materials, principally in damp-proof construction. There are many types of structures through which the permeation of moisture is ruinous to either the appearance or the efficiency of the construction, or is seriously detrimental to the health of either animal or human life. The efflorescence due to the leaching out and subsequent carbonization of the lime on the surface of a concrete wall might well be prevented by the incorporation of an agent capable of excluding all moisture. Again, the dampness of many cellars, with its danger to health, could have been prevented had the walls and floors been damp-proofed. The following types of structures might be damp-proofed at an exceedingly slight extra expense by the incorporation of a small amount of the proper kind of mineral oil residuum with the mortar or concrete used in construction: Basement floors, basement walls, watering troughs, cisterns, barns, silos, concrete blocks, roofs, stucco, and numerous important engineering constructions.

Basement Floors.

There are many basement floors which are continuously damp, owing to the percolation of moisture from the underlying soil. Concrete and mortar as ordinarily made are neither perfectly nonabsorbent nor waterproof, so that ground water readily finds its way through to the basement and causes a very unsanitary condition.

A floor which will remain perfectly dry may be constructed at a cost but very slightly higher than that of the ordinary basement floor by the incoporation of a petroleum residuum oil with the ordinary concrete mixture. The following method of construction, using an oil-cement mixture, is suggested as one which will prevent the permeation of moisture even from a very wet subsoil.

It will be well, if the underlying soil is very wet, to lay a 6-inch foundation of sand, cinders, broken stone, or gravel, compacting these materials well by tamping. In addition it will be of advantage to employ drain tiles in this porous foundation, leading them to a sewer if possible. On top of the foundation should be laid a 4-inch layer of concrete mixed in the proportions of 1 part of Portland cement, 2½ parts of sand, and 5 parts of broken stone or gravel. Before the concrete base has hardened, a top or wearing coat of mortar mixed in the proportions of 1 part of cement and 2 parts of sand or stone screenings and containing 5 per cent of oil (2½ quarts per bag of cement) should be laid. This top coat, because of its nonabsorbent character, will give perfect protection from underlying moisture, and moreover it will build a floor which will dry out very quickly after washing, since practically none of the washing water will be absorbed.

Portland Cement Factory—Trident.

It might be thought that the addition of oil to the mortar-wearing coat would tend to make the surface slippery. Such, however, is not the case; nor is the appearance very much different from that of an ordinary cement floor. Should joints be provided for expansion and contraction, it will be necessary to fill them with a good bituminous filler to prevent the entrance of water.

Many cellar floors now made of Portland cement concrete are giving trouble owing to the permeating moisture. They are continually damp and, owing in part to the constant evaporation from their surface, they are cold. Such a condition may be remedied by the application of an oil-mixed mortar coat to the surface of the old floor. Before attempting

to lay a new wearing surface, the old floor should be scrubbed thoroughly clean and should be made thoroughly wet. The bond between the old and the new work will be improved if the surface be roughened with a stone hammer. A wash composed of 1 part of hydrochloric acid and 5 parts of water may be used to clean the surface. This will dissolve some of the cement from the old work, leaving the aggregate exposed. The acid solution should be left on not longer than half an hour, when it should be completely removed with clean water. The surface should then be brushed with a wire or stiff scrubbing brush to remove any particles of sand which may have become loosened because of the dissolving of the cement.

A mortar composed of 1 part of cement and 2 parts of sand and containing 5 per cent of oil will be sufficiently nonabsorbent for the new wearing coat. To strengthen the bond it will be well to apply a wash of grout, made by mixing cement with water to the consistency of cream, before laying the oil-mixed mortar coat. For the ordinary basement floor a 1-inch layer of mortar will prove of sufficient thickness. It will be necessary to keep the new mortar damp for at least one week in order that it may attain its proper strength.

Other Constructions.

The following proportions are given for concrete mixtures in other constructions with instructions for making and applying the same:

Cellar Walls—A concrete mixture in the proportions of 1 part of cement, 2½ parts of sand, and 5 parts of gravel or broken stone, together with 10 per cent of oil based on the weight of cement in the mixture.

Basement Walls Now Built of Stone, Brick or Concrete—The application of a plaster coat of oil-mixed mortar in the proportions of 1 part of cement to 2 parts of sand, together with 5 per cent of oil, and mixed with enough water to form a rather stiff mortar, will prove an efficient remedy for this trouble.

Watering Troughs—A mixture of 1 part of Portland cement, 2 parts of clean coarse sand, and 4 parts of gravel, ranging in size from ¼-inch to 1-inch, and 10 per cent of oil based on the weight of cement mixed to a jellylike consistency is recommended.

Cisterns—For a cistern construction a mixture composed of 1 part of cement, 2 parts of sand, and 4 parts of gravel or broken stone, together with 10 per cent of oil, is effective.

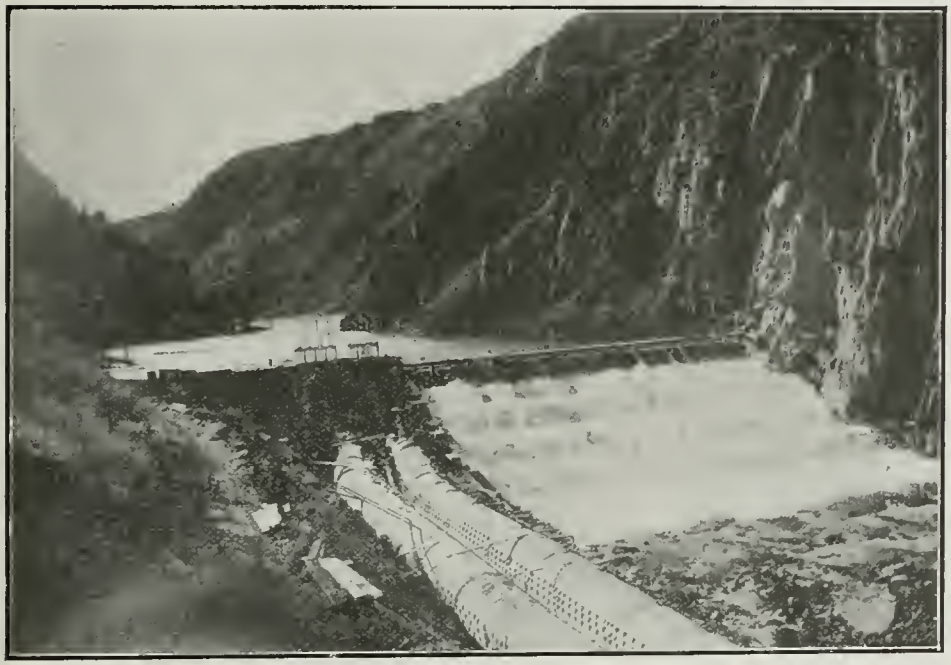
Barns—Barn floors are made damp-proof by the addition of oil as previously described for floors. In the side walls oil equal to 5 per cent of the weight of cement is mixed with the concrete.

Stucco—The first coat should be mixed in the proportions of 1 part of Portland cement and 2 parts of clean coarse sand, with enough water to form a good, stiff mortar. If 5 per cent of oil is added to this mixture the first coat will be permanently waterproof. The use of oil in the other coats may be omitted if desired.

When stucco is applied to stone or hollow tile, care should always be

taken to have the surface well moistened or otherwise a great deal of water will be absorbed from the mortar coat, and so greatly weaken it and cause contraction cracks to form.

The Bulletin gives complete instructions for the construction of cellar walls, watering troughs, cisterns, barns, concrete blocks, roofs, stucco, and engineering constructions.



Madison River Power Company's Dam.

The Counties.

The main range of the Rocky mountains divides the state into two parts of unequal size. Eastern Montana, which comprises two-thirds of the area, is on the Atlantic slope of the continent, was part of the territory acquired by the Louisiana purchase, and is drained by the Missouri and Yellowstone rivers, which unite in North Dakota a few miles east of the Montana line.

The counties of Beaverhead, Big Horn, Blaine, Broadwater, Carbon, Cascade, Chouteau, Custer, Dawson, Fergus, Gallatin, Hill, Jefferson, Lewis and Clark (except an unimportant part), Madison, Meagher, Musselshell, Park, Rosebud, Sweet Grass, Teton, Valley and Yellowstone are in the part of Montana that lies east of the continental divide. Western Montana is on the Pacific slope of the continent, was part of the Oregon territory, and drains into the Pacific ocean through the Columbia river. The counties of Deer Lodge, Flathead, Granite, Lincoln, Missoula, Powell, Ravalli, Sanders, Silver Bow and a part of Lewis and Clark are in western Montana. A small area in Glacier park in the extreme northern part of the state drains into Hudson bay.

According to the value of the property assessed counties are divided into eight classes. When the assessed valuation amounts to $30,000,000 or more the county is of class one; between 20 and 30 millions of class two; between 15 and 20 millions of class three; between 11 and 15 millions of class four; between 8 and 11 millions of class five; between 5 and 8 millions of class six; between 3 and 5 millions of class seven, and less than three millions of class eight. The following tables gives the class, area, population, and county seat of each county:

THE COUNTIES OF MONTANA.

COUNTY.	Class	COUNTY SEAT.	Area (9)	Population. 1900	Population. 1910
Beaverhead (1)	6	Dillon	5,691	5,615	6,446
Big Horn (10)	7	Hardin	5,000	....	6,000
Blaine (2)	7	Chinook	6,203	....	....
Broadwater	7	Townsend	1,194	2,641	3,491
Carbor	6	Red Lodge	2,438	7,533	13,962
Cascade	2	Great Falls	3,384	25,777	28,833
Chouteau (3)	3	Fort Benton	4,711	10,966	17,191
Custer	3	Miles City	13,156	7,891	14,123
Dawson	6	Glendive	13,231	2,443	12,725
Deer Lodge	5	Anaconda	749	17,393	12,988
Fergus (4)	3	Lewistown	7,303	6,937	17,385
Flathead	5	Kalispell	6,070	9,375	18,785
Gallatin	4	Bozeman	2,513	9,553	14,079
Granite	7	Philipsburg	1,637	4,328	2,942
Hill (2)	7	Havre	5,058	....	....
Jefferson	6	Boulder	1,650	5,330	5,601
Lewis and Clark	2	Helena	3,465	19,171	21,853
Lincoln	6	Libby	3,530	....	3,628
Madison (5)	6	Virginia City	3,609	7,695	7,229
Meagher (6)	6	White Sulphur Springs	3,548	2,526	4,190
Missoula	3	Missoula	4,243	13,964	23,596
Musselshell (7)	6	Roundup	4,656	....	....
Park	5	Livingston	2,675	7,341	10,731
Powell	6	Deer Lodge	2,559	....	5,904
Ravalli	6	Hamilton	2,447	7,822	11,666
Rosebud	5	Forsyth	9,663	....	7,985
Sanders	7	Thompson	2,859	....	3,713
Silver Bow	1	Butte	698	47,635	56,848
Sweet Grass	6	Big Timber	2,918	3,086	4,029
Teton	5	Choteau	7,581	5,080	9,546
Valley	5	Glasgow	13,515	4,355	13,630
Yellowstone (8)	2	Billings	3,066	6,212	22,944
			146,201	243,329	376,053

(1) Part taken from Madison in 1911. (2) Organized in 1912 from a part of Chouteau; population included in Chouteau. (3) Blaine and Hill taken from Chouteau in 1912. (4) Part of territory and population put in Musselshell in 1911 and a small area ceded to Meagher. (5) A part ceded to Beaverhead in 1911. (6) Part put in Musselshell, and a small area taken from Fergus in 1911. (7) Formed in 1911 from parts of Fergus, Meagher and Yellowstone. (8) Part of territory and population put in Musselshell in 1911. (9) Areas as given in the census report and changes made since 1910 computed in this office. (10) Created January 6, 1913, from parts of Yellowstone and Roesbud counties; area and population estimated.

The state government is divided into three departments—the legislative, the executive and the judicial.

The legislative department consists of the legislative assembly, which is composed of two bodies, the Senate and the House of Representatives. The Senate consists of one senator from each county who is elected for a term of four years. The House of Representatives consists of 86 members, the apportionment having been fixed by the act approved February 21, 1911; Musselshell county, created by act of February 11, 1911, was allowed one member; and Big Horn, Blaine and Hill counties, which were organized under the provisions of the act of March 6, 1911, relating to the organization of new counties, are, by the terms of the act, entitled to one representative each. Members of the House of Representatives are elected for the term of two years, according to the apportionment shown in the following table:

County.	Number.	County.	Number.
Beaverhead	One	Lewis and Clark	Five
Big Horn	One	Lincoln	One
Blaine	One	Madison	Two
Broadwater	One	Meagher	One
Carbon	Three	Missoula	Five
Cascade	Six	Musselshell	One
Chouteau	Four	Park	Two
Custer	Three	Powell	One
Dawson	Three	Ravalli	Two
Deer Lodge	Three	Rosebud	Two
Fergus	Four	Sanders	One
Flathead	Four	Silver Bow	Twelve
Gallatin	Three	Sweet Grass	One
Granite	One	Teton	Two
Hill	One	Valley	Three
Jefferson	One	Yellowstone	Five

The governor is the head of the executive department and is elected for the term of four years. Other executive officers elected for the same period are the lieutenant governor, the secretary of state, the attorney general, the treasurer, the auditor, and the superintendent of public instruction. Three railroad commissioners are elected for six years, the term of one expiring every two years.

The judicial department consists of the supreme court, composed of one chief justice and two associate justices, who are elected for terms of six years. A clerk of the supreme court is elected for the same period.

The state is divided into 14 judicial districts in which are elected for terms of four years one or more judges as follows:

District.	COUNTIES.	Number of Judges.
First	Lewis and Clark	Two
Second	Silver Bow	Three
Third	Deer Lodge, Granite and Powell	One
Fourth	Missoula, Ravalli and Sanders	Two
Fifth	Beaverhed, Jefferson and Madison	Two
Sixth	Park and Sweet Grass	One
Seventh	Custer and Dawson	One
Eighth	Cascade and Teton	Two
Ninth	Gallatin	One
Tenth	Fergus	One
Eleventh	Flathead and Lincoln	One
Twelfth	Blaine, Chouteau, Hill and Valley	Two
Thirteenth	Carbon, Big Horn, Musselshell, Rosebud and Yellowstone	Two
Fourteenth	Broadwater and Meagher	One

CITIES AND TOWNS.

Cities are divided into three classes according to population. A city of the first class is one that has a population of 10,000 or more; a city of the second class is one that has a population of 5,000 and less than 10,000; a city of the third class is one that has a population of 1,000 and less than 5,000. Incorporated towns have populations ranging from 300 to 1,000.

With very few exceptions the cities and towns of Montana transact an amount of business greatly in excess of that transacted in places of similar population in the older states, are busy, growing places, inhabited by energetic and public spirited citizens who generously support churches, schools, charities and public enterprises. Anaconda, Billings, Bozeman, Butte, Great Falls, Helena and Missoula have good street car systems; nearly all cities and towns have water and sewer systems; electric lights

are a universal convenience; in the cities the principal streets are paved; boulevarded streets and cement sidewalks are numerous and are being added to each year; well equipped fire companies are maintained and there is efficient police protection.

CITIES AND INCORPORATED TOWNS.

Incorporated	NAME.	POPULATION.		COUNTY.
		1910	1900	
	Anaconda	10,134	9,453	Deer Lodge.
	Baker	.....	.....	Custer.
1908	Bear Creek	302	.....	Carbon.
1906	Belgrade	561	.....	Gallatin.
1907	Belt	1,158	.....	Cascade.
1902	Big Timber	1,022	.....	Sweet Grass.
1885	Billings	10,031	3,221	Yellowstone.
	Boulder	.....	.....	Jefferson.
1883	Bozeman	5,107	3,419	Gallatin.
1907	Bridger	514	.....	Carbon.
1879	Butte	39,165	30,470	Silver Bow.
	Cascade	.....	.....	Cascade.
	Chester	.....	.....	Hill.
1901	Chinook	780	.....	Blaine.
	Choteau	.....	.....	Teton.
1909	Columbia Falls	601	.....	Flathead.
1907	Columbus	521	.....	Yellowstone.
1909	Conrad	888	.....	Teton.
1909	Culbertson	528	.....	Valley.
	Cut Bank	.....	.....	Teton.
	Deer Lodge	2,570	1,324	Powell.
	Dillon	1,835	1,530	Beaverhead.
1909	Eureka	603	.....	Lincoln.
1908	Forsyth	1,398	.....	Rosebud.
	Fort Benton	1,004	1,024	Choutean.
	Fromberg	.....	.....	Carbon.
1902	Glasgow	1,158	.....	Valley.
1902	Glendive	2,428	.....	Dawson.
1888	Great Falls	13,948	14,930	Cascade.
	Hamilton	2,240	1,257	Ravalli.
	Hardin	.....	.....	Yellowstone.
1910	Harlem	383	.....	Blaine.
1908	Harlowton	770	.....	Meagher.
	Havre	3,624	1,033	Hill.
1881	Helena	12,515	10,770	Lewis and Clark.
1906	Joliet	389	.....	Carbon.
1902	Kalispell	5,549	2,526	Flathead.
1908	Laurel	806	.....	Yellowstone.
1901	Lewistown	2,992	1,096	Fergus.
1909	Libby	630	.....	Lincoln.
1889	Livingston	5,359	2,778	Park.
1909	Malta	292	.....	Valley.
	Manhattan	.....	.....	Gallatin.
1887	Miles City	4,697	1,938	Custer.
1883	Missoula	12,869	4,366	Missoula.
1910	Moore	573	.....	Fergus.
	Neihart	268	833	Cascade.
	Philipsburg	1,109	995	Granite.
1907	Plains	481	.....	Sanders.
	Plentywood	.....	.....	Valley.
	Polson	.....	.....	Flathead.
1901	Pony	369	.....	Madison.
1900	Red Lodge	4,860	2,152	Carbon.
	Ronan	.....	.....	Missoula.
1910	Roundup	1,513	.....	Musselshell.
	Shelby	.....	.....	Teton.
	Sheridan	399	.....	Madison.
1910	Sidney	345	.....	Dawson.
	Stanford	.....	.....	Fergus.
	Stevensville	796	346	Ravalli.
	Terry	.....	.....	Custer.
1910	Thompson Falls	325	.....	Sanders.
1910	Three Forks	674	.....	Gallatin.
	Townsend	759	446	Broadwater.
1902	Twin Bridges	491	.....	Madison.
	Valier	.....	.....	Teton.
	Victor	374	136	Ravalli.
	Virginia City	467	568	Madison.
	Walkerville	2,491	2,621	Silver Bow.
1905	Whitefish	1,479	.....	Flathead.
1904	Whitehall	417	.....	Jefferson.
	White Sulphur Springs	417	446	Meagher.
1910	Wibaux	487	.....	Dawson.

GRANITE
DEERLODGE
SILVERBOW
RAVALLI
BITTER ROOT MOUNTAINS
BEAVERHEAD
MADISON
IDAHO
Bowen
Gibbons
Wisdom
Dewey
Vipond
Lavon
Willis PO
Glen Sta
Apex
Bond
Argenta
DILLON
Morrison
Bannack
Barratts
Point Dexter
Grayling
Granf
Armstead
Redrock
Crab Tree
Dell
Monida
Lakeview
Wyno
Briston
Fox
Aurora
Jackson
Polaris
Farlin
Point Dexter
Upper Red Rock L.
Lower Red Rock L.
SAWTOOTH MT.
SCALE IN MILES
10 0 10 20 30 40 50
The Clason Map Co Denver Colo

BEAVERHEAD COUNTY.

Beaverhead county, located in the southwestern corner of the state, has an area of about 5,000 square miles. It contains the source of the Missouri river, and is well watered. The principal rivers are the Beaverhead and the Big Hole and each has many tributaries. Along the streams are valleys of varying sizes, from which rise bench lands and rolling hills that extend to high mountains.

The discovery of gold at Bannack in 1862 caused a stampede into what is now Montana; other rich placer deposits were soon found; the territory of Montana was created and Bannack made the capital. Beaverhead county was created by act of the first territorial legislature, approved February 2, 1865. Many of the most interesting events in the early history of Montana occurred in this county.

Beaverhead county embraces much picturesque scenery, is noted for the excellence of the fishing and hunting, has several hot springs, and many residents of the cities of Butte and Anaconda enjoy outings there in the summer.

The industries are stock-growing, farming and mining. Large quantities of gold, silver and lead have been mined, and many undeveloped mines and mining districts offer attractive opportunities for the investment of capital. Near Melrose large deposits of high grade phosphate rock have been discovered on public land and many thousand acres have been withdrawn from the operation of the laws relating to the acquisition of mining claims. Under the present policy of the government this valuable deposit of a much needed mineral cannot be utilized.

Farming lands are irrigated and non-irrigated, mainly irrigated. The chief farming district embraces land in the Beaverhead valley and the smaller connecting valleys of Blacktail, Rattlesnake and Grasshopper creeks. Oats and hay are the principal crops. Oats yield from 60 to 100 bushels per acre and are of a very high grade. At the Montana State Fair of 1911 George Edinger of this county won the splendid silver cup offered by President Elliott of the Northern Pacific Railway for the best oats grown in Montana. Farming without irrigation on bench lands is a recent development. Good crops of wheat, barley, flax, potatoes and other products have proved the adaptability of large areas of bench lands for successful farming without irrigation. Hay, however, is the chief crop. Many thousand acres are planted to alfalfa and timothy and the native grasses yield good crops of excellent hay.

The leading industry is stock growing, which includes the raising of sheep, cattle and horses. The numerous flocks of sheep flourish on the nutritious native grasses and produce great quantities of wool. Large sums are annually realized from the sale of horses. The cattle industry has two phases; one is the raising of cattle bred in the county and the other is the fattening of beef steers bought outside the county, and sometimes outside the state, and brought into Beaverhead county to be fattened for the market. About 22,000 steers are being fed in the winter

of 1912. The Big Hole Basin is the seat of this industry, and every year many thousand beef cattle are fattened on the grasses that grow there abundantly and furnish the best of food. The beef cattle from Beaverhead county bring top prices at the stock yards and are in demand for shipment to Alaska.

The Big Hole Basin is one of the most wonderful and prosperous parts of Montana and the hay harvest there is a very interesting sight. Centennial valley, a good stock country, was taken from Madison and put into Beaverhead county in 1911.

Markets for all products are close at hand. Butte gets much of its farm products from this county. Transportation is provided by the Oregon Short Line railroad which crosses the county from north to south. The Pittsburg and Gilmore railroad has been built from Armstead west into Idaho and is expected to be part of some transcontinental line whose identity has not been disclosed. An extension through Dillon to the Jefferson valley, through which now run two transcontinental lines, is a probability of the near future, and there has been filed with the secretary of state notice of a proposed branch line to be built through Bannack pass from a point near Brenner's to one near Purcell's, a distance of 46 miles.

From the census bulletin, "Statistics of Agriculture—Montana," the following figures are taken:

PRINCIPAL CROPS IN 1910.

Crop.	Acres.	Production.	Crop.	Acres.	Production.
Corn.....	....	.....	Hay and forage, total	148,096	167,595
Oats.....	15,255	792,144	Timothy alone	8,610	12,033
Wheat....	763	20,101	Timothy and clover mixed...	2,256	4,044
Barley....	225	4,865	Alfalfa	14,169	35,523
Rye.....	96	1,680	Other tame and cultivated grasses (exclusive of clover alone)	1,945	3,471
Flaxseed..	....	.....	Grains cut green	257	508
Dry Peas..	....	280	All other hay and forage....	120,859	112,016
Potatoes..	408	77,715			

Dillon, the county seat, is a delightful place of residence and is the principal business point in the county. It had a population of 1,835 in 1910. In the city are two banks, a good hotel, two wholesale and twelve retail stores, a fine public library and public schools noted for their excellence. Two weekly newspaper are published. There are Baptist, Catholic, Episcopal and Presbyterian churches and other denominations that do not yet possess church buildings. Dillon has electric lights, water works and sewers. It is said promising openings exist for a flour and cereal mill, a wool scouring plant and for smelters.

The Montana State Normal College, a well equipped institution for the training of men and women to become teachers in the public schools, is located at Dillon. The faculty is a strong one, the number of students large and increasing yearly; the buildings are commodious and the grounds beautiful. The college possesses a well merited reputation for the success it has achieved. Many of the most efficient teachers in the public schools of Montana are graduates of the State Normal College. Lima in the

southern part of the county is an important railroad town and shipping point. Wisdom is the chief town in the large and prosperous Big Hole Basin.

The diversity of industries adds to the prosperity of the inhabitants. The farming industry is growing every year as new lands are brought into cultivation. The soil is very fertile and grains, grasses and root crops make abundant yields. In the valleys, the land capable of irrigation has passed into private ownership as has also much of the best grazing lands; but some tracts of public land suitable for dry farming may be found on the benches and entered under the homestead law; and opportunities to purchase excellent deeded farming lands at reasonable prices are numerous.

The population of Beaverhead county in 1910, before the cession of Centennial valley, was 6,446. The number of voters registered in 1912 was 2,365; the number of votes cast in 1908 was 1,690. Assessed valuations for the last three years were as follows: $7,595,324 in 1910; $8,604,073 in 1911; and $8,854,277 in 1912. At the last assessment real estate and improvements were valued at $3,643,360, and personal property, which consists chiefly of live stock, at $3,208,8620. Horses of various classes numbered 11,224, valued at $494,510; cattle of all kinds 55,882 head, valued at $1,349,710; sheep 160,216, valued at $331,164; and hogs of the value of $5,285.

Excluding 8,193 acres in town lots, patented mining claims and in railroad rights of way, the acres of land assessed numbered 452,623, the average value being $3.69 per acre.

Three telegraph companies had 235.5 miles of line, and four telephone companies had 521.5 miles of wire. There are two railroads. The Oregon Short Line had, including side tracks, 106.46 miles of track, and the Pittsburg and Gilmore 41.5 miles.

This county is in the Helena land district, and on July 1, 1912, there were 254,550 acres of surveyed, and 224,701 acres of unsurveyed, unappropriated public land.

The secretary of the Beaverhead Commercial Club, Dillon, will supply further information about opportunities in Beaverhead county, on request.

FARMS AND FARM PROPERTY IN 1910, COMPILED FROM U. S. CENSUS REPORT.

Population	6,446	Average values:	
Population in 1900	5,615	All property per farm	$25,670
		Land and buildings per farm	$16,042
Number of all farms	536	Land per acre	$16.79
Number of all farms in 1900	518	Land per acre in 1900	$7.48
Color and nativity of farmers:		DOMESTIC ANIMALS. (Farms and ranges)	
Native white	365	Farms reporting domestic animals	515
Foreign-born white	169	Value of domestic animals	$4,748,660
Negro and other nonwhite	2		
Number of farms, classified by size:		Cattle:	
Under 3 acres	2	Total number	69,198
3 to 9 acres	5	Dairy cows	2,017
10 to 19 acres	2	Other cows	28,390
20 to 49 acres	4	Yearling heifers	7,502
50 to 99 acres	5	Calves	5,357
100 to 174 acres	102	Yearling steers and bulls	8,279
175 to 259 acres	22	Other steers and bulls	17,258
260 to 499 acres	156	Value	$2,065,672

500 to 999 acres	122
1,000 acres and over	116
LAND AND FARM AREA.	
Approximate land area—acres	3,020,160
Land in farms—acres	461,315
Land in farms, 1900—acres	385,635
Improved land in farms—acres	275,530
Improved land in farms in 1900—acres	168,451
Woodland in farms—acres	3,088
Other unimproved land in farms—acres	182,697
Per cent of land area in farms	15.3
Per cent of farm land improved	59.7
Average acres per farm	860.7
Average improved acres per farm	514.0
VALUE OF FARM PROPERTY.	
All farm property	$13,758,988
All farm property in 1900	$5,451,808
Per cent increase, 1900–1910	152.4
Land	$7,746,832
Land in 1900	$2,884,060
Buildings	$851,500
Buildings in 1900	$342,390
Implements and machinery	$398,763
Implements, etc., in 1900	$153,130
Domestic animals, poultry, and bees	$4,761,983
Domestic animals, etc., in 1900	$2,072,228
Per cent of value of all property in—	
Land	56.3
Buildings	6.2
Implements and machinery	2.9
Domestic animals, poultry and bees	34.6

Horses:	
Total number	15,711
Mature horses	12,922
Yearling colts	2,310
Spring colts	463
Value	$1,388,018
Mules:	
Total number	141
Mature mules	95
Yearling colts	40
Spring colts	6
Value	$16,510
Asses and Burros:	
Number	16
Value	$1,260
Swine:	
Total number	2,376
Mature hogs	1,384
Spring hogs	992
Value	$20,831
Sheep:	
Total number	197,349
Rams, ewes and wethers	180,084
Spring lambs	17,265
Value	$1,256,191
Goats:	
Number	31
Value	$178
POULTRY AND BEES.	
Number of poultry of all kinds	22,112
Value	$13,323
Number of colonies of bees	None

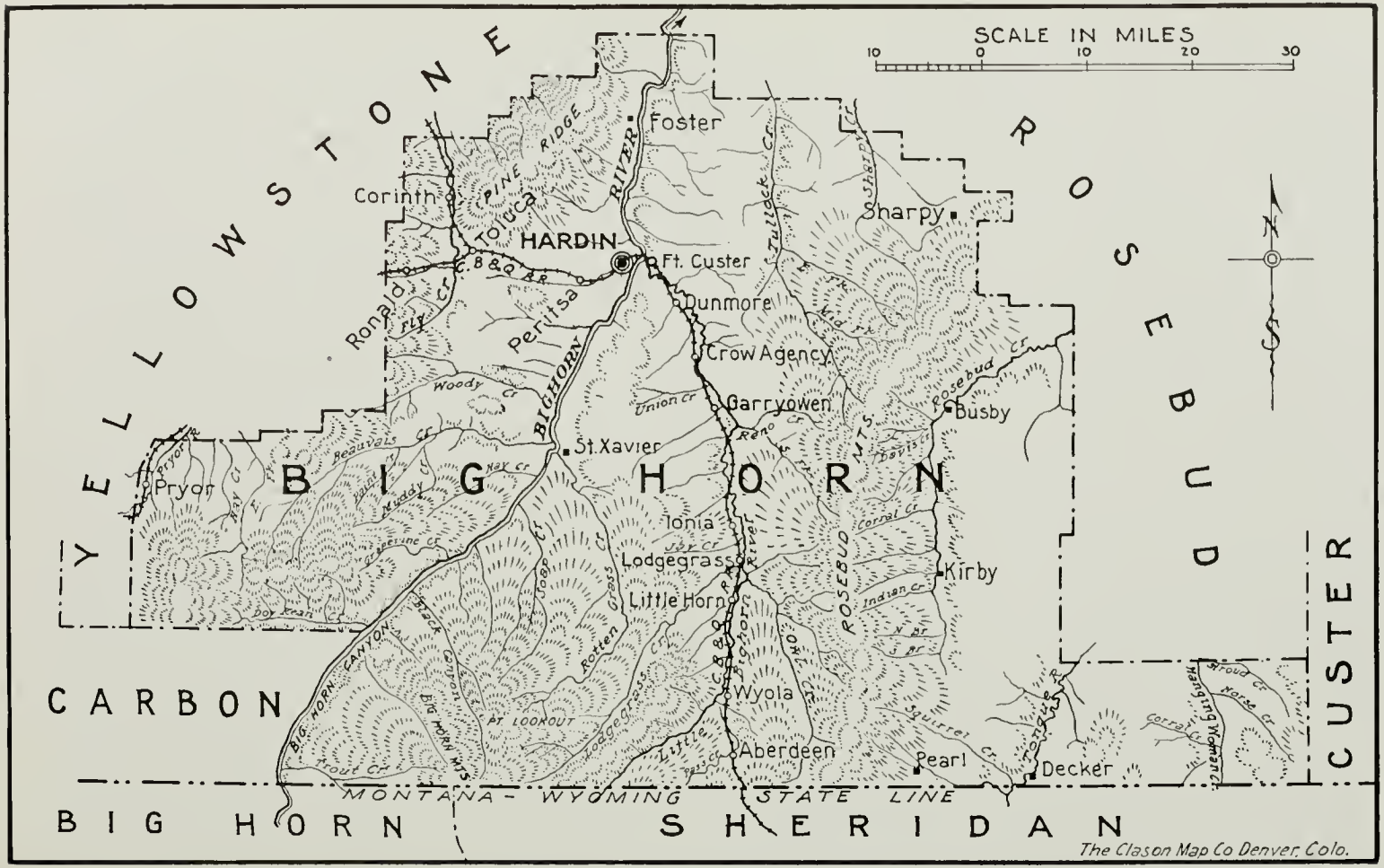
BIG HORN COUNTY.

Big Horn county, the youngest county in Montana, was created January 6, 1913, under the provisions of the act providing for the creation of new counties, approved March 6, 1911, as the result of an election held by the qualified voters residing in the territory embraced within its boundaries.

The principal geographical feature of the new county is the Big Horn river from which it is named. The Little Big Horn river also traverses the county and its course is followed by the Burlington railroad. On this stream is the Custer Battlefield National Cemetery, in which have been built monuments to the soldiers who fell in the disastrous battle of the Little Big Horn. Big Horn county includes nearly all of the Crow Indian reservation and a part of the Northern Cheyenne Indian reservation.

The development of the county as a farming region dates from the opening to settlement in 1906 of the Crow Indian reservation, and it is expected that further cessions will be made before many years as the amount of land included within the reservation is much in excess of the needs of the Indians. In addition to opportunities to obtain ceded lands, Indian owners under certain conditions may lease their tracts, and from time to time sales are made of lands that belonged to Indians who have died.

The industries are stock raising and farming; but there are many other sources of wealth in an undeveloped state. Coal has been found in numerous places, and ranchers near Hardin get their supplies from convenient coal banks. Near Hardin men of experience in the southern


SCALE IN MILES
10 0 10 20 30
YELLOWSTONE
ROSEBUD
CUSTER
CARBON
BIG HORN
SHERIDAN
MONTANA - WYOMING STATE LINE
Foster
Corinth
HARDIN
Ft. Custer
Sharpy
Dunmore
Crow Agency
Garryowen
Busby
St. Xavier
Pryor
Ionia
Lodgegrass
Little Horn
Kirby
Wyola
Aberdeen
Pearl
Decker
Pine Ridge
Tolus
Ronald
Peritsa
Big Horn
Rosebud
Rosebud Mts.
Big Horn Canyon
Big Horn Mts.
Rotten Grass
Lodgegrass
Little
Squirrel
Tongue R.
Wyola Gap
Pryor Mts.
Wolf Mts.
Sarpy Cr.
Crow Res.
The Clason Map Co Denver, Colo.

oil fields have started to drill for gas and oil. The Big Horn river is a rapid stream having many falls and is capable of furnishing hydro-electric power in large quantities.

The elevation of the Big Horn valley is about 2,900 feet and the climate is excellent. The growing season is long and the soil fertile. All the grains, grasses and vegetables that grow anywhere in the state make excellent yields. Common yields are; oats 50 to 105 bushels; wheat 30 to 65 bushels; alfalfa 5 to 7 tons; 60 bushels of corn to the acre have been raised, 600 bushels of potatoes, and sugar beets of excellent quality. The beet crop is a cash crop and the grower nets from $40 to $60 an acre. Parts of the county seem to possess advantages for the growing of apples on a commercial scale similar to those enjoyed by the Clarks Fork and Yellowstone valleys where the industry is well established and very profitable.

The chief agricultural development is in the Big Horn valley. Hardin is the center of 100,000 acres of irrigated land in the Big Horn and Little Big Horn valleys. The Big Horn valley extends north 35 miles to the Yellowstone valley and south 50 miles to the canyon of the river. West of Hardin is a high table land of 150,000 acres which it is proposed to irrigate.

In the northwestern part of the county and in other parts are large areas of land now chiefly used as grazing lands that are suitable for dry farming. In the southeastern corner, near the Wyoming line, is a district where are a number of farms.

William Flannery, who for more than forty years has been one of the leading farmers in the Gallatin valley, a few years ago had his attention attracted to the neighborhood of Toluca. He bought a large tract of land, has plowed and planted about 3,000 acres, and has raised large crops of grain and flax. Mr. Flannery's experience has demonstrated that a great acreage in Big Horn county may be farmed profitably without irrigation and many others have been equally successful on smaller farms. In the neighborhood of Hardin are said to be 500,000 acres of land suitable for dry farming.

Nevertheless the advantages of irrigation in assuring large crops at all times, in eliminating risk of crop shortage or failures, and in making profitable the raising of sugar beets and certain other crops that require much moisture, are so great that plans have been made to bring under irrigation many thousand acres of land lying at a higher elevation than the areas now irrigated.

The only railroad is the Burlington which runs along the banks of the Little Big Horn river from a point near the Wyoming line to Hardin, where it turns to the northwest and after a few miles enters the Yellowstone valley which it follows to its terminus at Billings. From Billings trains of the Burlington line continue to the Pacific coast on the tracks of the Northern Pacfic or of the Great Northern either by way of Butte or Helena and Missoula, or by way of Great Falls and Shelby.

Hardin, which at the election that created the county was named as the temporary county seat, is the only incorporated town. It is situated on the Burlington railroad sixty miles east of Billings on the west bank of the Big Horn river near where the Little Big Horn joins the larger stream. Hardin has made a remarkable progress in the few years since it has been in existence. It has many substantial business houses and residences, some built of brick made close to the town. It possesses a water system, a telephone system extending down the valley, has a grain elevator, a bank, a newspaper, churches, schools, and hopes for the establishment of a beet sugar factory. The trading point for an extensive, rich and rapidly developing region Hardin is a busy and substantial town which is growing steadily in population, wealth and in the amount of business tranasacted.

Big Horn county has an area of about 5,000 square miles, a population estimated at 6,000, and property of an assessed valuation of $4,124.923, of which amount $1,840,400 was taken from Yellowstone county and $2,284,523 from Rosebud county.

The census reports of Yellowstone and Rosebud counties include statistics covering the territory new embraced in Big Horn county.

The secretary of the Commercial Club at Hardin will supply further information about opportunities in Big Horn county, on request.

BOUNDARIES OF BIG HORN COUNTY.

Beginning at a point where the township line between townships 3 and 4 north range 34 east Montana Principal Meridian intersects mid channel of Big Horn River; thence west along said township line to the northwest corner of section 6, township 3 north, range 33 east; thence south to the southwest corner of section 19, township 3 north, range 33 east; thence west to the northwest corner of section 30, township 3 north, range 32 east; thence south to the northwest corner section 6, township 2 north, range 32 east; thence west to the northwest corner section 2, township 2 north, range 31 east; thence south to the northwest corner section 14, township 2 north, range 31 east; thence west to the northwest corner section 16 township 2 north,range 31 east; thence south to the northwest corner section 28, township 2 north, range 31 east; thence west to the northwest corner section 30, township 2 north, range 30 east; thence south to the southwest corner section 31,. township 1 north, range 30 east; thence west to the northwest corner section 6, township 1 south range 30 east; thence south to the northwest corner section 6, township 4 south, range 30 east; thence west to the northwest corner section 6, township 4 south, range 29 east; thence south to the southwest corner section 7, township 4 south, range 29 east; thence west to the northeast corner section 13, township 4 south, range 27 east! thence south to the southeast corner section 24, township 4 south, range 27 east; thence west to the southwest coruer section 19, township 4 south, range 27 east; thence north to the northeast corner section 25, township 4 south, range 26 east; thence west along the line of public survey to an intersection with the west boundary line of the Crow Indian reservation; thence in a southwesterly direction along the boundary line of said Crow Indian reservation to the southwest corner of said Crow Indian reservation; thence east along the boundary line of the Crow Indian reservation to an intersection of midchannel of Big Horn river; thence southwesterly along midchannel of said Big Horn river to its intersection with the north boundary line of the State of Wyomng; thence east along the north boundary line of the State of Wyoming to the county line, running north and south between Rosebud County, and the county of Custer; thence north along the county line between Rosebud County

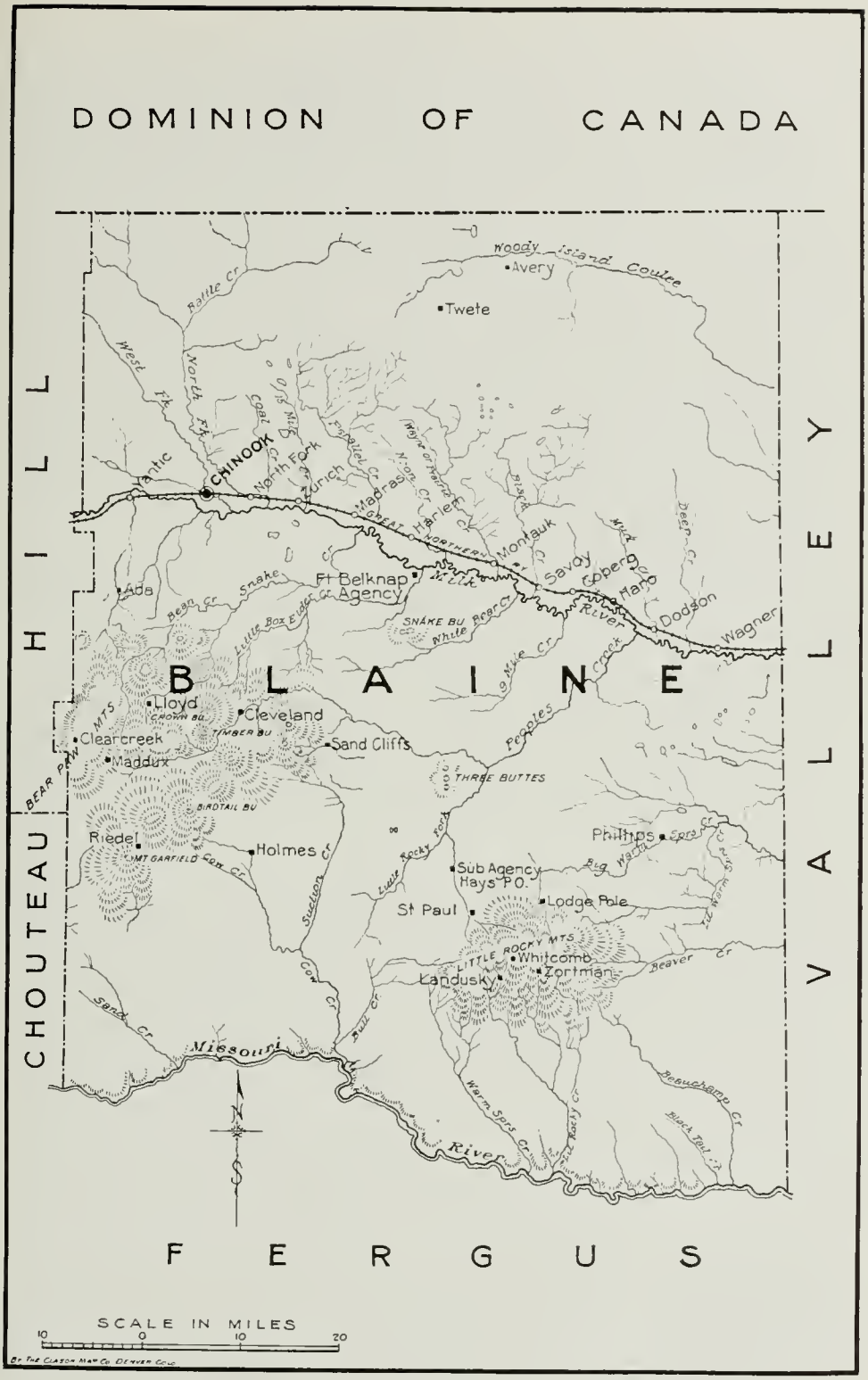
and the county of Custer to the northeast corner of township 8 south, range 44 east when surveyed; thence west to the northwest corner of township 8 south of range 41 east; thence north to the northeast corner of township 6 south of range 40 east; thence east to the southwest corner of township 5 south, range 41 east; thence north to the northern line of the Northern Cheyenne Indian reservation; thence west following the northern boundary line of the Northern Cheyenne Indian reservation; to a point from which a line produced (projected) north would intersect with the south line of township 1 south, range 39 east, at the southeast corner of section 33 township 1 south, range 39 east; thence north to the northeast corner section 4, township 1 south, range 39 east; thence east to the southeast corner of section 33 township 1 north, range 39 east; thence north to the northeast corner of section 21 township 1 north, range 39 east; thence west to the northwest corner of section 19, township 1 north, range 39 east; thence north to the northeast corner of section 1, township 1 north, range 38 east; thence west to the northwest corner of section 6, township 1 north, range 38 east; thence north to the northeast corner section 24, township 2 north, range 37 east; thence west to the northwest corner, section 19, township 2 north, range 37 east; thence north to the northeast corner, section 1, township 2 north, range 36 east; thence west to the northwest corner, section 6, township 2 north, range 35 east; thence north to the northeast corner, section 1 township 3 north, range 34 east; thence west along the township line between townships 3 and 4 north range 34 east, Montana Principal Meridian, to the point of beginning.

BLAINE COUNTY.

An act to provide for the creation, organization and classification of new counties was approved March 6, 1911 (Laws of Montana, Twelfth Session, Chapter 112, page 205), under whose provisions were created the counties of Blaine and Hill from parts of Chouteau county. The necessary proceedings having been taken an election was held February 20, 1912, of the registered voters inhabiting the territory embraced within the proposed new county of Blaine to determine whether said county should be created and to fix the location of the temporary county seat, which resulted as follows: In favor of the creation of Blaine county 971 votes, against 338; for Chinook as the county seat 888 votes, for Harlem 364 votes. The votes were canvassed by the board of county commissioners of Chouteau county which, in compliance with the provisions of the act, by a resolution entered upon its minutes declared such territory duly formed and created as a county under the name of Blaine county. A duly certified copy of said resolution was filed in the office of the Secretary of State, February 29, 1912, whereupon the county was fully created.

The boundaries of Blaine county are as follows:

Commencing at the closing corner of sections 3 and 4 township 37 north, range 17 east, Montana Meridian, which is on the International Boundary line between the United States and the British possessions; thence south on lines of public surveys to the standard corner of sections 33 and 34, township 37 north, range 17 east; thence west along the ninth standard parallel north to the closing corner of sections 3 and 4, township 36 north, range 17 east; thence south on lines of public survey to the standard corner of sections 33 and 34, township 33 north, range 17 east; thence east on the eighth standard parallel north to the closing corner of sections 2 and 3, township 32 north, range 17 east, thence south on lines of public survey to the southwest corner of section 14, township 32 north, range 17 east; thence east one and one half miles to the quarter section corner between sections 13 and 24;


DOMINION OF CANADA
HILL
VALLEY
CHOUTEAU
BLAINE
FERGUS
Woody Island Coulee
Avery
Twete
Rattle Cr
West Fk
North Fk
Coal Cr
CHINOOK
North Fork
Zurich
Frenchie Cr
Madras
Harlem
Montauk
Savoy
Hayes
Dodson
Wagner
Ada
Bean Cr
Snake
Ft Belknap Agency
Little Box Elder Cr
SNAKE BU
White Beaver
Peoples Creek
Lloyd
CROWN BU
Cleveland
TIMBER BU
Clearcreek
Maddux
Sand Cliffs
THREE BUTTES
BEAR PAW MTS
BIRDTAIL BU
Riedel
MT GARFIELD
Holmes
Sweetgrass Cr
Little Rocky Fork
Sub Agency
Hays P.O.
Phillips
Big Warm
St Paul
Lodge Pole
LITTLE ROCKY MTS
Whitcomb
Zortman
Landusky
Beaver Cr
Sandy Cr
Missouri
River
Warm Spgs Cr
Rebuchamp Cr
Black Tail Cr
N
SCALE IN MILES
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thence south on lines of public surveys five miles to the quarter section corner between sections 12 and 13, township 31 north, range 17 east, thence west one and one half miles to the nodthwest corner of section 14, township 31 north, range 17 east; thence south 4 miles to the southeast corner of section 34, township 31 north, range 17 east; thence west one mile to the southwest corner of said section 34; thence south 7 miles to the southwest corner of section 3, township 29 north, range 17 east; thence west one and one half miles to the quarter section corner of the north boundary of section 8, township 29 north, range 17 east; thence south on lines of public surveys five miles to the quarter section corner on the south boundary of section 32, township 29 north, range 17 east; thence east about 1 mile to the northwest corner of section 3, township 28 north, range 17 east; thence south on lines of public surveys to the standard corner of sections 33 and 34, township 25 north, range 17 east; thence west on lines of public surveys to the closing corner of sections 3 and 4, township 24 north, range 17 east; thence south on lines of public surveys to the center of the main channel of the Missouri River; thence in an easterly direction along the middle of the main channel of the Missouri River to the one hundred and eighth meridian west of Greenwich which is the southeast (southwest) corner of the county of Valley; thence north along said one hundred and eighth meridian to the international boundary between the United States and the British possessions; thence west along said international boundary to the place of beginning.

The census reports on population, farm statistics, irrigation and other subjects relating to the part of Montana that is now in Blaine county are included in the Chouteau county returns and cannot be separately given except in a few instances. The following districts of Chouteau county in 1910 are probably wholly within the present Blaine county as well as certain others which cannot be identified and the population returns were: Chinook, including Chinook town, 1,060; Chinook town, 780; East Chinook, 156; North Yantic, 110; South Yantic, 46; Madras, 128; Harlem, including Harlem town, 688; Harlem town, 383; Coberg, 117; Dodson, 569; Wagner, 87; Ada, 76; Lloyd, 101; Cleveland, 314; Maddux, 108; Reidel, 83; Clear Creek, 70; South Wagner, 165; Zortman, 132; Landusky, 522; and Fort Belknap Indian reservation, 1,194.

The number of voters registered in 1912 was 1,830; and, as some of the many new settlers who had come into the new county since the census was taken are not qualified to register, it is probable that the population of Blaine county is about 6,500.

Milk river crosses the county near the center from west to east. North from the river to the Canadian line extends a region of rolling hills, intersected by numerous streams and coulees, that is still used chiefly for grazing purposes but which contains much good farming land. South of the river the country rises to the Bear Paw mountains in the western, and the Little Rocky mountains in the eastern part. Flowing north from these elevations are many creeks that empty into Milk river. The southern slope of these hills drains into the Missouri river.

Blaine county has an area of 6,203 square miles. The industries are stock growing, farming and mining. Many herds of fine cattle and great numbers of sheep are owned in the county.

Milk river traverses the county from west to east, and the irrigated lands in its valley are among the most productive in the United States. Various small streams supply water for irrigating limited areas. Farming

without irrigation is successfully conducted on the bench lands; many thousands of acres have recently been put into cultivation; and on extensive areas of unoccupied public land many thousand settlers may find homes. On another page is given results of dry farming at the experiment station located 25 miles north of Harlem.

Blue joint hay is a wonderful crop in the Milk river valley and great quantities are exported from Harlem and Chinook. Wheat, oats, barley and flax are the other leading crops. Large yields are reported from Chinook and Harlem. On dry land south of Harlem, E. J. Miller raised 10,000 cabbages. Potatoes make excellent yields. Alfalfa is the most important of the cultivated hay crops. Tobacco has been grown in Chinook. Fruits do well; and James Griffin of Chinook possesses a silver cup which was awarded to him for the best display of apples of six varieties at the Montana State Fair.

The development of the agricultural resources of the Milk river valley has been hindered by the delay in completing the Milk river reclamation project; but, certain difficulties having been overcome, there is the prospect that this great enterprise will henceforth be carried on with commendable energy. Water is already supplied to setlers on the Dodson first unit under the lease system for about 2,000 acres. Flax, oats, wheat and about twenty acres of alfalfa were the crops grown. Upon the completion of this project it is expected that, as in the case of the Huntley project, sugar beets will prove to be a most profitable crop and that a sufficient acreage will be planted to cause the erection of a beet sugar factory at some convenient place. Lands will rise in value, the farming population will rapidly increase and all the towns will add to their business activities when the Milk river project is completed.

Blaine county has great mineral wealth. At Chinook are developed coal mines and at many other places are coal banks that supply local demands. In the Little Rockies is the most productive gold mining camp in Montana. The Ruby Gulch Mining Company of Zortman employs 150 men and is the principal producer. At Landusky are the mines of the August Gold Mining Company. The Rawhide, the Ninety-Six and the property of the Fergus Mining Company have been extensively developed. Besides ores rich enough to ship there are extensive deposits of low grade ores whose values may be extracted by the cyanide process. The building of a railroad and the bringing of electric power into this district would result in a wonderful increase in the annual output of gold.

Chinook, the county seat, had a population in 1910 of 780, is a rich and busy little city and is one the the most attractive places of residence in the state. It is surrounded by a prosperous farming country, has a coal mine at its door, modern water works, business houses whose trade extends over a large territory, banks, newspapers, good hotel, a creamery, an elevator, many churches and good schools. There is an opening for an electric light plant and for a flax mill.

Many thousand of fertile acres are tributary to Dodson, whose business

will be multiplied when the Milk river project is completed and the irrigated lands settled upon. Harlem is an enterprising and growing town which has constructed a water system in the past year, commenced to build sewers and expects soon to have electric lights. Harlem has large business houses, attractive residences, a newspaper, and is the shipping point for an extensive country.

Blaine county is in the Havre land district and on July 1, 1912, there were 310,600 acres of surveyed and 1,663,200 acres of unsurveyed, unappropriated public land. The Fort Belknap Indian reservation is wholly within this county and there is no prospect that it will soon be opened to settlement.

For 1912, the first year of its existence, the new county of Blaine had a total assessed valuation of $5,113,812. Real estate and improvements were valued at $1,812,509, and personal property, chiefly live stock, at $1,220,131; horses of various classes numbered 7,145, valued at $335,490; cattle of all kinds 7,282 head, valued at $149,092; 286,886 sheep valued at $642,006, and hogs of the value of $1,953.

The acres of land assessed numbered 224,387, the average value being $3.75 per acre. Three telegraph companies had 441 miles of line and five telephone companies had 84 miles of wire. The only railroad is the Great Northern, which has 86 miles of track.

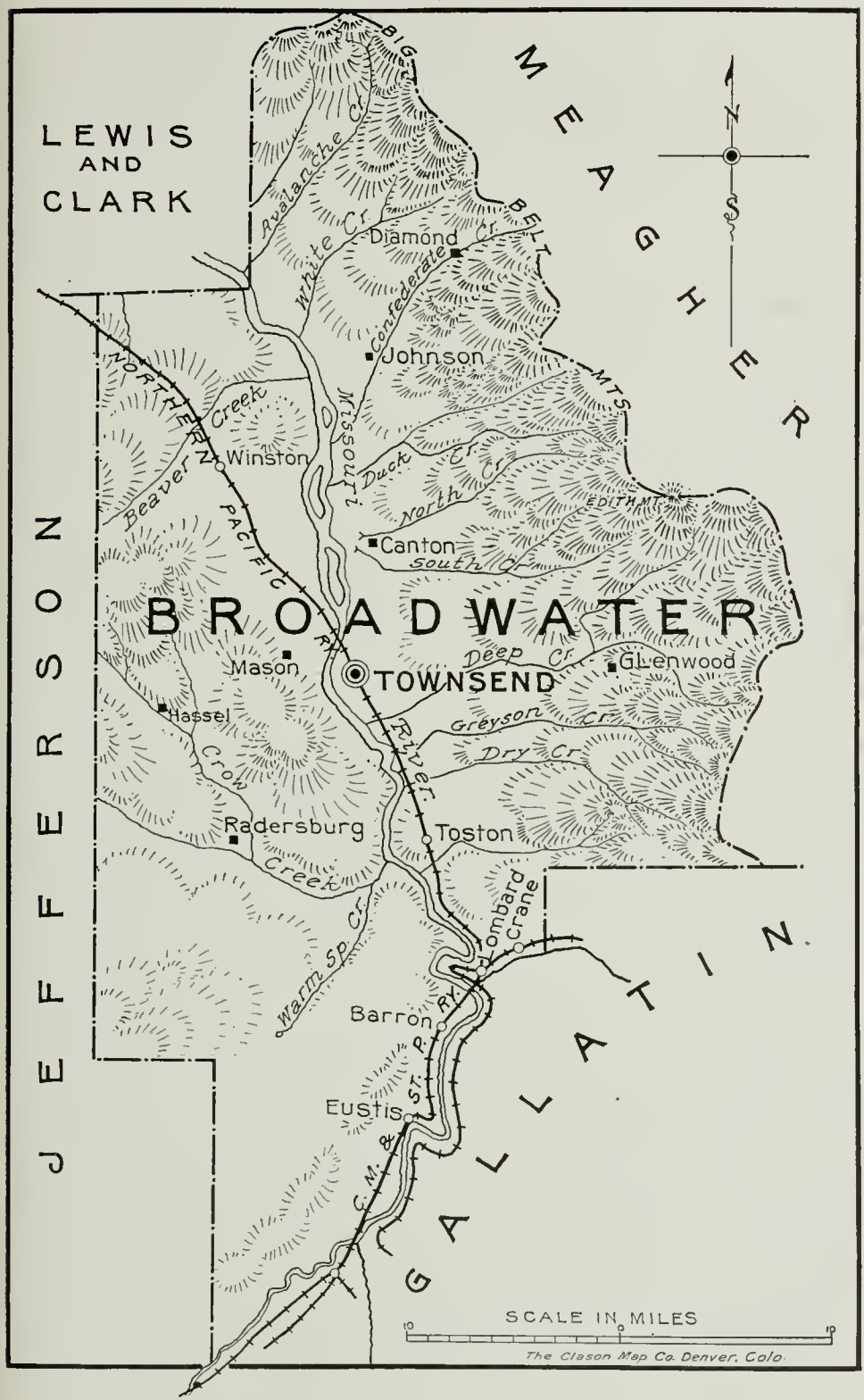
The secretaries of the Commercial Clubs at Chinook and Harlem will furnish further information about opportunities in Blaine county, on request.

BROADWATER COUNTY.

Broadwater county has an area of 1,182 square miles, lies north of Gallatin, south of Lewis and Clark, west of Jefferson and east of Meagher counties, embraces the upper Missouri river valley and is within close shipping distance of the cities of Butte and Helena. It was created from parts of Meagher and Jefferson counties by act of February 9, 1897, and named in honor of Colonel Charles A. Broadwater, who was a leading citizen in Montana in the pioneer period.

The Big Belt range forms the eastern, and lower mountains the western boundary. In both ranges rise streams that flow into the Missouri river. The principal agricultural districts are in the Missouri river valley and in the valley of Crow creek.

The industries are farming, stock raising and mining. The mineral area is extensive and rich and the placer and quartz mines have yielded great sums. The principal mines are at Radersburg and Winston, from which places many tons of ore are annually shipped to smelters. Radersburg is the liveliest gold mining camp in the state. Many miners are steadily employed at the chief mines, much development work is being done, new deposits of ore bodies are being discovered as work progresses in old and new mines, and the indications are that Radersburg will develop into one of the leading mining camps of the country when a railroad reaches it; as, owing to the cost of freighting to a station, only ores of high grade


LEWIS AND CLARK
MEAGHER
JEFFERSON
GALLATIN
BROADWATER
TOWNSEND
Diamond
Johnson
Winston
Canton
Mason
Hassel
Radersburg
Toston
Glenwood
Barron
Eustis
Avalanche Cr.
White Cr.
Confederate Cr.
BELT MTS.
Missouri River
Beaver Creek
NORTHERN PACIFIC RY.
Duck Cr.
North Fork
South Fork
EDITH MT.
Deep Cr.
Greyson Cr.
Dry Cr.
Crow Creek
Warm Sp. Cr.
Lombard
Crane
C. M. & St. P. Ry.
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SCALE IN MILES
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The Clason Map Co. Denver, Colo.

can now be profitably shipped. Notwithstanding this handicap production is increasing. A company whose connection, if any, with the large railroad systems was not disclosed, has constructed a railroad grade for a part of the way between Three Forks and Radersburg and it was hoped that grading would soon be followed by track laying; but the work ceased and the grade remains unfinished.

The old district of Hassel is again attracting attention; the district of which Winston is the shipping point is a regular producer and the probability that a railroad will be built through the Big Belt mountains and into Helena has stimulated activity in the mineral districts on the eastern side of the Missouri river in the northern part of the county.

The range sheep industry has been the source of many fortunes for men who owned from 2,000 to 20,000 sheep. Mountains and foothills still afford good range for many horses, cattle and sheep. Much attention has been paid to the breeding of high grade live stock. The claim is made that Broadwater county has the best horses in Montana. There are over fifty registered stallions ranging from the Shetland weighing 350 pounds to the Percheron weighing 2,200 pounds.

Fine herds of beef and dairy cattle are numerous. In 1904 fifty farmers and business men organized and started the Townsend creamery, which is the pride of the county. From a small beginning the output has steadily increased and 186,600 pounds of butter of a superior quality were produced in 1912. The butter finds a ready sale at Helena and other neighboring cities.

The farmer is paid 29 cents a pound for butter fat; and at this price a cow of fair grade often yields an annual income of $70. Higher grade cows yield larger returns, and dairymen are coming to realize the economy of keeping only good stock and of feeding to produce the best results. A family that has ten to twelve acres of good land and has twenty good cows can earn a comfortable living from the sale of milk. Few devote themselves wholly to milk production, but either as the main industry or as a side line it has proven profitable to many farmers to whose homes the monthly creamery checks for milk delivered are welcome visitors.

There are pure bred herds of Poland-China, Chester White, Berkshire, Duroc and Hampshire hogs and the raising of swine is profitable. The Poland-Chinas owned by P. J. Meloy of Townsend have won many first prizes at the Montana State Fair, and in 1911 a pen of them won the first prize at the Spokane Interstate Fair.

The principal farming districts are in the Missouri and Crow creek valleys, where many thousand acres are irrigated. The chief crops are oats, wheat and alfalfa, timothy, and blue-joint hay. Oats make large yields, are of a superior quality, and have been sold to cereal mills and for seed. Wheat is in demand from millers and many cars of alfalfa and timothy hay are shipped annually. Potatoes yield from 300 to 400 bushels to the acre and other vegetables do equally well.

During the last three years many thousand acres on the foothills and

benches that extend from Three Forks to the northern end of the county have been settled upon and farmed without irrigation. A large part of the uplands is adapted to dry land farming and good crops have been raised at many places, the rainfall in the spring and early summer being sufficient to produce large yields of all crops that are properly planted and cultivated. The soil, a warm and very productive loam, is easy to work. Winter wheat, rye, bald barley and alfalfa are the chief crops on non-irrigated farms. Lands of this kind subject to homesteading may still be found, and raw lands may be bought at low prices and turned into productive farms. Large ranches have been subdivided and are offered for sale in farm lots. The raising of apples and other fruits on a commercial scale is a new and promising industry. Apples of many varieties have been grown. At the Stafford ranch near Avalanche creek is an excellent orchard that has been in bearing for twenty years; and it is said that four thousand dollars were received from the sale of fruit gathered one year from fifteen acres.

From the census bulletin, "Statistics of Agriculture—Montana," the following figures are taken:

PRINCIPAL CROPS IN 1910.

Crop.	Acres.	Production.	Crop.	Acres.	Production.
Corn.....	75	4,000	Hay and forage, total	23,632	42,398
Oats.....	8,417	364,628	Timothy alone	627	1,018
Wheat....	2,896	68,272	Timothy and clover mixed....	501	1,211
Barley....	383	8,450	Alfalfa	8,178	23,926
Rye.....	528	8,815	Other tame and cultivated grasses (exclusive of clover alone)	140	225
Flaxseed..	....	.....			
Dry Peas..	....	2,488			
Potatoes..	263	55,652	Grains cut green	484	836
			All other hay and forage.....	13,702	15,182

The main line of the Northern Pacific follows the Missouri valley from Lombard to Townsend, and the Butte branch is separated by the Jefferson river from the southern boundary. The Mondak-Helena line of the Great Northern will cross a mineral district in the northern part. The Milwaukee, which enters the county near Lombard and passes through the southern end, is expected to build from Three Forks, via Radersburg, into the Missouri valley.

The chief towns are Townsend, Winston, Radersburg and Toston. Toston is the shipping point for the growing mining camp of Radersburg, eleven miles west, and for an extensive country including much of the fertile Crow creek valley. Winston, 21 miles from Helena, is the supply point for a rich mining district and of a farming and stock region.

Townsend, the county seat and principal town, is located where the Northern Pacific railroad crosses the Missouri river, is a financial, educational and social center. The population in 1910 was 759. The city owns the electric lighting plant, has a volunteer fire department, five miles of sidewalks, graded streets, excellent schools, Catholic, Episcopal, Methodist, and Methodist South churches, good school buildings, large business houses, good residences, an elevator, a creamery, telegraph, telephone,

express and two newspapers. There are good openings for a flour mill, an alfalfa mill, and a beet sugar factory.

The population of Broadwater county in 1910 was 3,491, an increase of 32 per cent since 1900. The number of voters registered in 1912 was 1,162; the number of votes cast in 1908 was 861. Assessed valuations for the last three years were as follows: $1,678,378 in 1910; $3,382,621 in 1911; and $3,490,860 in 1912. At the last assessment real estate and improvements were valued at $1,460,590, and personal property, consisting chiefly of live stock, at $911,807. Horses of various classes numbered 5,053, valued at $210,040; cattle of all kinds 9,886 head, valued at $185,544; sheep 47,450, valued at $96,105; and hogs valued at $4,455.

The acres of land assessed numbered 276,923, the average valuation being $3.37 per acre. Four telegraph lines had 69 miles of line, and four telephone companies had 108 miles of wire. The Northern Pacific railroad had 53 miles of track and the Chicago, Milwaukee and Puget Sound railroad 22 miles.

July 1, 1912, there were 19,482 acres of surveyed, and 12,160 acres of unsurveyed, unappropriated public land in Broadwater county within the jurisdiction of the Bozeman land district, and 87,500 acres of surveyed and 87,785 acres of unsurveyed, unappropriated public land belonging to the Helena land district.

The Secretary of the Commercial Club, Townsend, will supply further information about opportunities in Broadwater county, on request.

FARMS AND FARM PROPERTY IN 1910, COMPILED FROM U. S. CENSUS REPORT.

Population	3,491
Population in 1900	2,641
Number of all farms	390
Number of all farms in 1900	222
Color and nativity of farmers:	
Native white	283
Foreign-born white	107
Negro and other nonwhite	None
Number of farms, classified by size:	
Under 3 acres	1
3 to 9 acres	2
10 to 19 acres	4
20 to 49 acres	13
50 to 99 acres	13
100 to 174 acres	175
175 to 259 acres	22
260 to 499 acres	64
500 to 999 acres	54
1,000 acres and over	42
LAND AND FARM AREA.	
Approximate land area—acres	764,160
Land in farms—acres	183,887
Land in farms in 1900—acres	106,799
Improved land in farms—acres	58,777
Improved land in farms in 1900—acres	49,484
Woodland in farms—acres	4,206
Other unimproved land in farms—acres	120,904
Per cent of land area in farms	24.1
Per cent of farm land improved	32.0
Average acres per farm	471.5
Average improved acres per farm	150.7
VALUE OF FARM PROPERTY.	
All farm property	$5,008,328
All farm property in 1900	$2 131,330
Per cent increase, 1900-1910	135.0
Land	$3,336,600
Average values:	
All property per farm	$12,842
Land and buildings per farm	$9,588
Land per acre	$18.14
Land per acre in 1900	$8.95
DOMESTIC ANIMALS. (Farms and ranges)	
Farms reporting domestic animals	359
Value of domestic animals	$1,112,007
Cattle:	
Total number	14,704
Dairy cows	1,674
Other cows	7,106
Yearling heifers	1,740
Calves	1,830
Yearling steers and bulls	1,442
Other steers and bulls	912
Value	$383,880
Horses:	
Total number	5,354
Mature horses	4,455
Yearling colts	678
Spring colts	221
Value	$414,468
Mules:	
Total number	215
Mature mules	149
Yearling colts	59
Spring colts	7
Value	$17,160
Asses and Burros:	
Number	14
Value	$6,550
Swine:	
Total number	3,010
Mature hogs	1,519
Spring pigs	1,491
Value	$23,315

Land in 1900	$955,900
Buildings	$402,558
Buildings in 1900	$179,180
Implements and machinery	$143,603
Implements, etc., in 1900	$66,810
Domestic animals, poultry, and bees	$1,125,567
Domestic animals, etc., in 1900	$929,440
Per cent of value of all property in—	
Land	66.6
Buildings	8.0
Implements and machinery	2.9
Domestic animals, poultry, and bees	22.5

Sheep:	
Total number	51,139
Rams, ewes and wethers	46,202
Spring lambs	4,937
Value	$266,319
Goats:	
Number	59
Value	$315
POULTRY AND BEES.	
Number of poultry of all kinds	19,379
Value	$12,772
Number of colonies of bees	136
Value	$788

CARBON COUNTY.

Carbon county, which adjoins Wyoming and takes its name from the extensive coal deposits that exist within its boundaries, was created from parts of Park and Yellowstone counties by an act approved March 4, 1895.

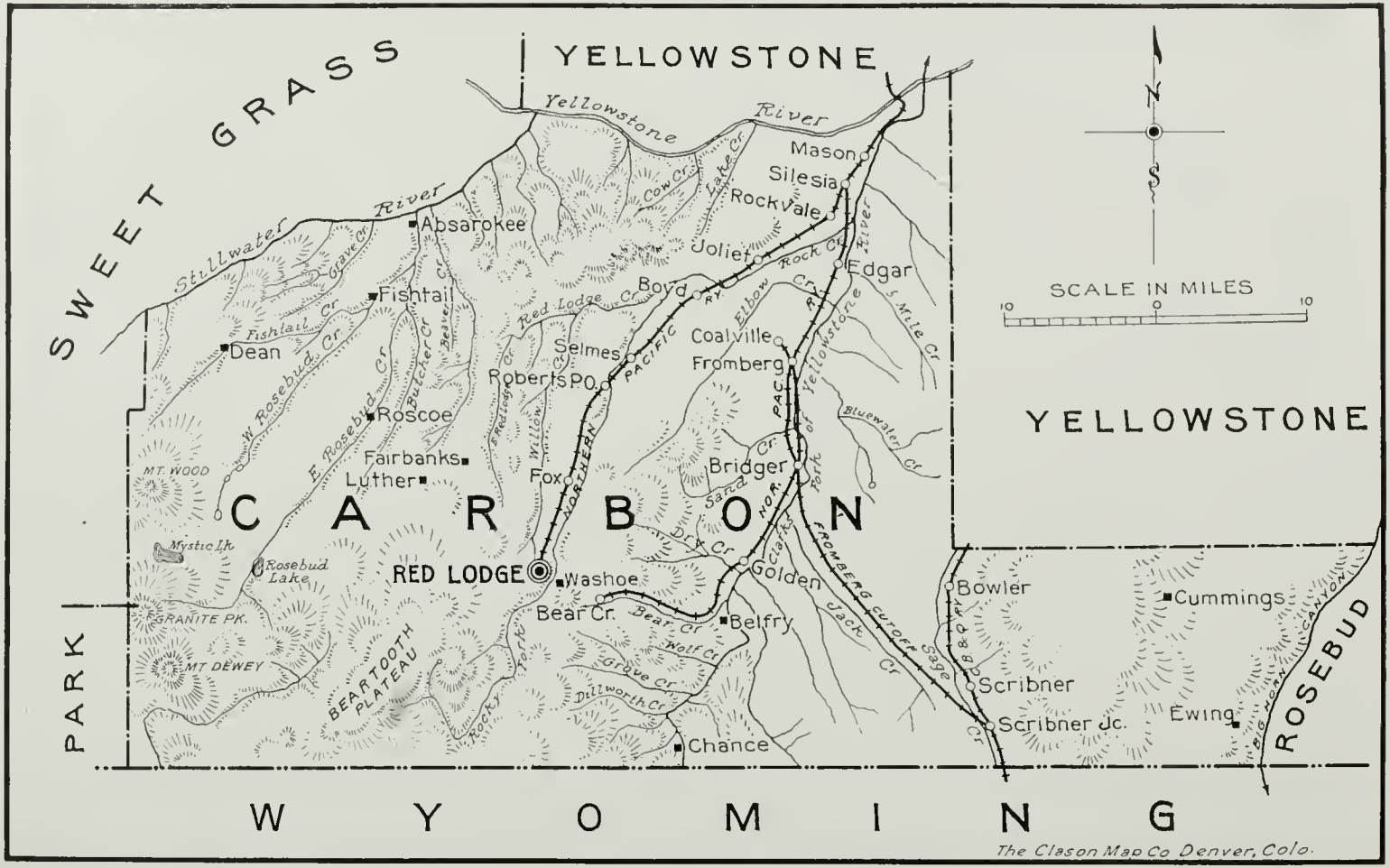
The southern part is a mountainous region of great scenic beauty in which rise numerous streams whose waters flowing north through valleys of varying width finally discharge into the Yellowstone river. The largest stream is Clark's Fork of the Yellowstone. It rises in the southern slope of the Bear Tooth mountains, runs east through a mountainous part of Wyoming, turns to the north, crosses the line between Wyoming and Montana and flows in a northwesterly direction through the entire length of Carbon county. The western part of the county is drained by the Stillwater river and its numerous affluents. Rock creek is a large stream that flows through the central part. Many thousand acres in the valleys are irrigated from canals that bring water from these streams and their rapid fall make them available as sources of hydro-electric power.

In the mountains are forests, gold, silver, lead and copper mineral claims, excellent hunting and fishing, and much remarkably beautiful scenery. In several places in the county are indications of natural gas and petroleum.

The industries are coal mining, stock raising, farming and fruit growing. Immense coal measures exist. A government report stated that in 1907 there were 1,238,796,784 tons of unmined coal in the Red Lodge field which is one of several fields. Forty-five feet is the total thickness of the veins, and the coal they contain if put together would form a block one mile square and one-fifth of a mile high.

The output of the Carbon county coal mines for the last four years has been as follows: 1,098,476 tons in 1909; 1,197,430 tons in 1910; 1,226,783 tons in 1911; and 1,267,585 tons in 1912. The value of the coal at the mouth of the mine in 1911 was $2,100,784.42, and in 1912 $2,362,695. A thousand men are employed at Red Lodge and about 600 at Bear Creek, Washoe, Bridger and Coalville, making a total of about 1,600 men who are employed in coal mining in this county. These men are steadily employed at good wages and their demands create a home market for farm products.

Stock growing is an important industry. Many sheep run on the ranges and Carbon county is noted for the excellence of its beef cattle. Besides raising live stock on the range and hogs on alfalfa pasture, Carbon


SWEET GRASS
YELLOWSTONE
Yellowstone River
Stillwater River
Absarokee
Fishtail
Dean
Roscoe
Fairbanks
Luther
MT. WOOD
Mystic Lk
Rosebud Lake
GRANITE PK.
MT DEWEY
BEARTOOTH PLATEAU
RED LODGE
Washoe
Bear Cr.
Belfry
Chance
Fox
Roberts Po
Selmes
Boyd
Joliet
Rockvale
Silesia
Mason
Edgar
Coalville
Fromberg
Bridger
Golden
Bowler
Cummings
Scribner
Scribner Jc.
Ewing
ROSEBUD
PARK
CARBON
YELLOWSTONE
WYOMING
SCALE IN MILES
The Clason Map Co Denver, Colo.

county has uncommon advantages for the fattening of beef cattle and sheep for market, having a good climate, abundance of water, and home grown hay, grain, beet top and beets for food. The conversion into beef, mutton or pork, of hay and grain on the place where produced, is the most profitable use than can be made of these crops.

The valley of the Stillwater and the East Rosebud and West Rosebud rivers in the western part extending from the Yellowstone river to the highlands in the southern part of the county. In the valleys of the Stillwater and the East and West Rosebud rivers are many fine farms and stock ranches. On the benches many new farms have been started in the past five years and good crops have been raised without irrigation. Fruit growing is successfully carried on at many places and a large acreage in the northern part of this district seems to possess exceptional advantages for growing apples, pears, cherries and small fruits. Good peaches have been grown near Columbus. Surveys that have been made show that it is practicable at reasonable expense to construct a railroad up the Stillwater valley which would afford access to the extensive ore deposits that have been developed at Cooke City and penetrate one of the most fertile sections in the state. Absarokee and Fishtail are the chief towns in this part of the county.

East of the country drained by tributaries of the Stillwater lies Rock creek valley through which runs the Red Lodge branch of the Northern Pacific railroad. The valley is narrow for the most part, but broadens near the point of junction with Clark's Fork valley. The waters of Rock creek irrigate a large acreage, and many dry land farms are situated on the benches that enclose the valley. Red Lodge, the county seat, and Joliet are in this district.

Rock creek empties into Clark's Fork of the Yellowstone near Rockvale, a few miles from where the last named river joins the Yellowstone. The Clark's Fork valley, about fifty miles long and from four to ten miles wide, is the principal agricultural district of Carbon county and is one of the most productive parts of Montana. From the river and streams that empty into it enough water is brought to irrigate the greater part of the land in the valley, while on the foothills farming is successful without irrigation where the proper system of cultivation is carried on. Clark's Fork valley produces a great variety of field and orchard products. Sugar beets is a main crop, alfalfa is extensively grown, and wheat, oats and barley make large yields. Standard vegetables do well; celery is extensively grown, and cantaloupes of the Rock Ford flavor are raised. Near Fromberg is the noted apple orchard of Rev. J. G. Clark, from 32 acres of which $10,000 worth of apples, plums and crab apples have been gathered in one year. The conditions which make a district peculiarly excellent for fruit growing are present in this section; numerous orchards are producing, and others, covering a large acreage, are too young to bear. Experiments in growing fruit without irrigation have been encouraging. Orchard pests and frosts are absent, the quality of the

fruit is unexcelled, and the color is uncommonly rich as a result of the great amount of sunshine.

The diversity of industries adds to the prosperity of Carbon county, the development of whose resources has only made a beginning. The number of men employed in the coal mines may be expected to increase every year; there is a possibility that petroleum may be discovered in paying quantities; and the prospect is that sooner or later a large number of workmen will find employment in flour and cereal mills, in a beet sugar factory, and in mills that will utilize the deposits of gypsum that have been discovered.

The yearly production of the farms and orchards approximates $2,000,000 in value, hay being the chief crop and oats and wheat next in importance. The crop of sugar beets in 1912 will sell for about $300,000; the yield will average about 15 tons per acre, and will sell according to sugar content from $5 to $7 a ton; and as much as $100 an acre has been realized from a crop of sugar beets. Dairying is also a source of wealth, and creameries are operating at Fishtail, Red Lodge and Joliet. There are grain elevators at Red Lodge and Joliet, and a flouring mill at the latter place.

From the census bulletin, "Statistics of Agriculture—Montana," the following figures are taken:

PRINCIPAL CROPS IN 1910.

Crop.	Acres.	Production.	Crop.	Acres.	Production.
Corn.....	311	9,732	Hay and forage, total	42,388	104,288
Oats.....	18,816	704,282	Timothy alone	6,369	9,441
Wheat....	8,430	224,807	Timothy and clover mixed....	5,119	7,842
Barley....	1,656	44,454	Alfalfa	26,058	80,567
Rye.....	11	268	Other tame and cultivated grasses (exclusive of clover alone)	1,405	1,905
Flaxseed..	....	.....	Grains cut green	354	524
Dry Peas..	....	424	All other hay and forage.....	3,083	4,009
Potatoes..	925	168,003			

The main line of the Northern Pacific railroad is separated from this county by the Yellowstone river. At Laurel the Rocky Fork branch to Red Lodge goes out from the main line and also the Clark's Fork branch which terminates at Bridger. From Bridger the Montana, Wyoming and Southern railroad extends to Belfry, Bear Creek and Washoe, a distance of 25 miles. The Burlington railroad has completed the Fromberg cut-off from Scribner near the Wyoming line and runs through trains using the Northern Pacific tracks from Bridger to Laurel and the Great Northern tracks from Laurel to Great Falls, Shelby Junction and Pacific coast points.

Washoe and Bear Creek are coal mining towns in the foothills west of Clark's Fork valley. Bridger is a coal mining town and the supply point for a farming and ranch country. Fromberg, the chief town of the valley, has two coal mines adjacent to it and is surrounded by a highly cultivated region of farms and orchards. Besides many business houses, a bank and a newspaper, at Fromberg are four nurseries, a pressed brick

and tile factory, a canning factory, wants an alfalfa mill, a creamery, a flour mill and openings in other lines. There are three churches and a public high school.

Joliet, a flourishing town in Rock creek valley, is the principal shipping point for the central part of the county, has an elevator and flour mill, banks, newspaper, several general stores, four churches, a school building, is growing steadily and has made permanent municipal improvements costing considerable sums.

Red Lodge, the county seat, had a population of 4,860 in 1910, is the seat of a coal mine that gives steady employment to over 1,000 men, and is one of the busiest and most prosperous cities in the state. It has a high school, graded schools, two hospitals, two newspapers, three banks, hotels, two wholesale and thirty-five retail stores. Many new business houses have been recently erected and much money has been spent in city improvements. Many miles of cement walks have been laid and a sewer system costing $50,000 was installed a few years ago. The city is lighted by electricity, has an elevator, a creamery and does a large trade with the country tributary to it.

The population of Carbon county in 1910 was 13,962; the number of voters registered in 1912 was 3,194; the number of votes cast in 1908 was 2,317. Assessed valuations for the last three years were as follows: $7,191,148 in 1910; $7,422,213 in 1911; and $7,483,299 in 1912. At the last assessment real estate and improvements were valued at $3,910,811 and personal property at $2,128,188. Horses of various classes numbered 8,362, valued at $364,095; cattle of all kinds 13,372 head, valued at $239,345; and hogs of the value of $8,765. The acres of land assessed numbered 290,078, the average value being $8 per acre. Two telegraph companies had 233.53 miles of line, and three telephone companies had 1,047.41 miles of wire. The railroad mileage of the Northern Pacific Railroad Company is 89 miles, of the Chicago, Burlington and Quincy 41 miles, and of the Montana, Wyoming and Southern 32 miles.

July 1, 1912, there were in Carbon county a total of 535,337 acres of unappropriated public land. In the Bozeman land district were 84,231 acres of surveyed and 10,880 acres of unsurveyed, unappropriated public land, and in the Billings land district were 322,426 acres of surveyed and 118,000 acres of unsurveyed, unappropriated public land.

Farm and fruit lands may be bought at reasonable prices, and the secretaries of the Commercial Clubs at Red Lodge and Fromberg will supply further information about opportunities in Carbon county, on request.

FARMS AND FARM PROPERTY IN 1910, COMPILED FROM U. S. CENSUS REPORT.

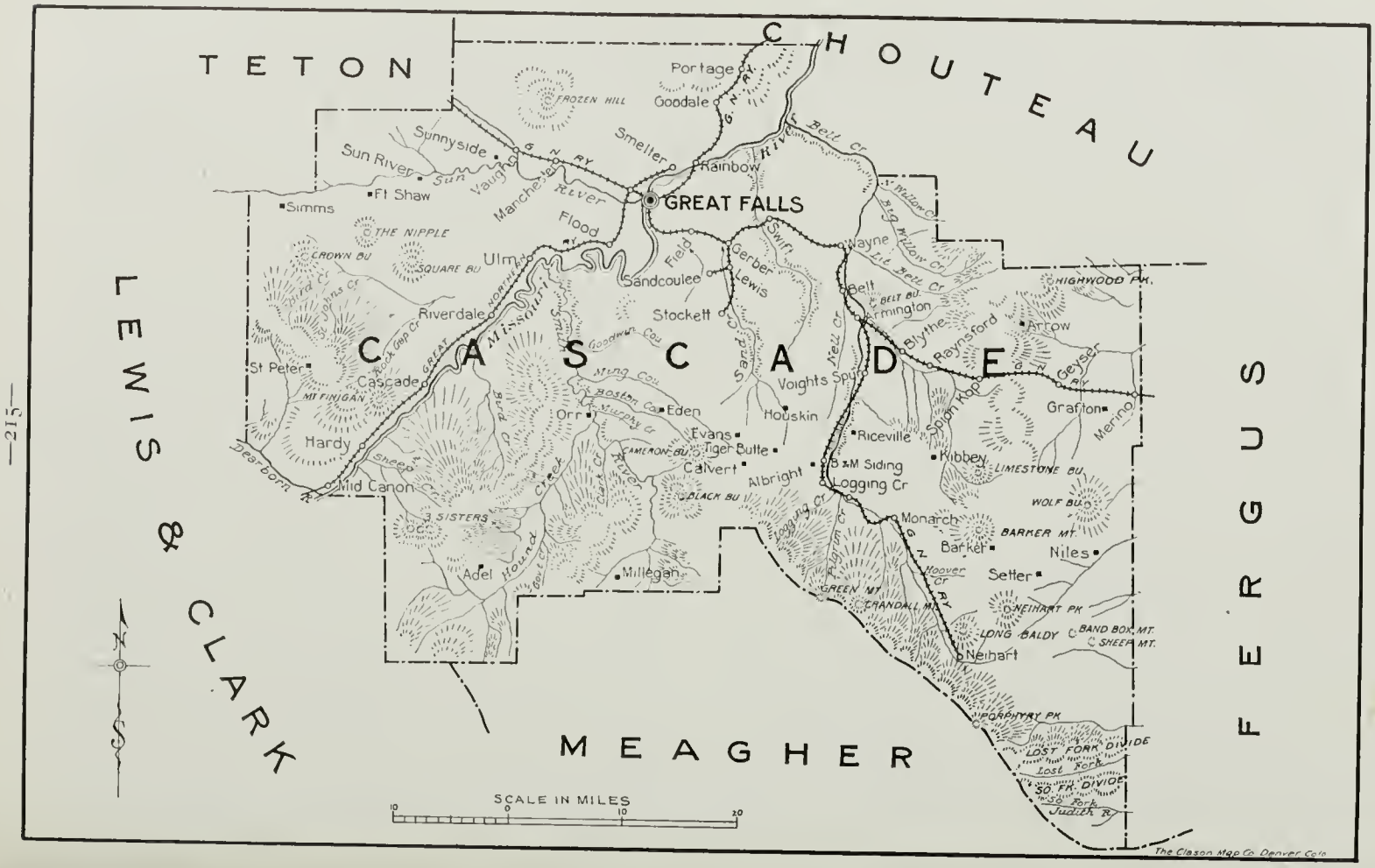
Population	13,962
Population in 1900	7,533
Number of all farms	1,264
Number of all farms in 1900	871
Color and nativity of farmers:	
Native white	905
Foreign-born white	357
Negro and other nonwhite	2
Number of farms, classified by size:	
Under 3 acres	3
3 to 9 acres	6
10 to 19 acres	11
20 to 49 acres	43
50 to 99 acres	78
100 to 174 acres	753
175 to 259 acres	90
260 to 499 acres	221
500 to 999 acres	45
1,000 acres and over	14
LAND AND FARM AREA.	
Approximate land area—acres	1,560,320
Land in farms—acres	286,449
Land in farms in 1900—acres	151,988
Improved land in farms—acres	120,409
Improved land in farms in 1900—acres	77,165
Woodland in farms—acres	10,891
Other unimproved land ni farms—acres	155,149
Per cent of land area in farms	18.4
Per cent of farm land improved	42.0
Average acres per farm	226.6
Average improved acres per farm	95.3
VALUE OF FARM PROPERTY.	
All farm property	$14,235,323
All farm property in 1900	$3,598,742
Per cent increase, 1900-1910	295.6
Land	$9,207,074
Land in 1900	$1,528,240
Buildings	$1,176,640
Buildings in 1900	$336,020
Implements and machinery	$512,538
Implements, etc., in 1900	$188,860
Domestic animals, poultry, and bees	$3,339,071
Domestic animals, etc., in 1900	$1,545,622
Per cent of value of all property in—	
Land	64.7
Buildings	8.3
Implements and machinery	3.6
Domestic animals, poultry, and bees	23.5
Average values:	
All property per farm	$11,262
Land and buildings per farm	$8,215
Land per acre	$32.14
Land per acre in 1900	$10.06
DOMESTIC ANIMALS. (Farms and ranges)	
Farms reporting domestic animals	1,179
Value of domestic animals	$3,299,642
Cattle:	
Total number	39,307
Dairy cows	4,520
Other cows	16,635
Yearling heifers	3,766
Calves	3,529
Yearling steers and bulls	3,244
Other steers and bulls	7,078
Value	$1,127,137
Horses:	
Total number	10,733
Mature horses	9,059
Yearling colts	1,288
Spring colts	386
Value	$1,143,159
Mules:	
Total number	272
Mature mules	169
Yearling colts	91
Spring colts	12
Value	$28,220
Asses and Burros:	
Number	8
Value	$2,575
Swine:	
Total number	6,318
Mature hogs	3,606
Spring pigs	2,712
Value	$47,294
Sheep:	
Total number	171,583
Rams, ewes, and wethers	154,047
Spring lambs	17,536
Value	$950,893
Goats:	
Number	35
Value	$364
POULTRY AND BEES.	
Number of poultry of all kinds	62,442
Value	$34,070
Number of colonies of bees	1,195
Value	$5,359

CASCADE COUNTY.

Cascade, one of the richest and most populous counties of Montana, is situated in the northern central part of the state, has rich mineral and agriculture resources, an unequalled water power, and is destined to be the seat of numerous manufacturing establishments and of a commerce that will extend for hundreds of miles in every direction.

The southern part includes a part of the Little and Big Belt ranges and the Highwood mountains extend across the eastern border. The Missouri river crosses the county from the southwest to the northeast and is joined near Great Falls by the Sun river, that rises in Teton county and drains a large section east of the Rocky mountains, and by Smith and Belt rivers from the south. These streams have extensive valleys.

Cascade county is in the chinook belt, and warm winds from the Pacific ocean moderate the winter temperature. The occasional cold spells are rarely of long duration and are attended by the dry, calm atmosphere


TETON
CHOUTEAU
LEWIS & CLARK
FERGUS
MEAGHER
CASCADE
GREAT FALLS
Portage
Goodale
Sunnyside
Sun River
Ft Shaw
Simms
Smelter
Rainbow
Belt Cr
Marchesseau River
Flood
Swift
Wayne
Big Willow Cr
Lit Belt Cr
THE NIPPLE
CROWN BU
SQUARE BU
Ulm
Field
Gerber
Lewis
Sandcoulee
Belt
HIGHWOOD PK.
Riverdale
Stockett
Armington
Blythe
Reynsford
Arrow
Geyser
St Peter
Cascade
Voights Spur
Spion Kop
Grafton
Merino
MT FINIGAN
Orr
Eden
Houskin
Riceville
Kibbey
LIMESTONE BU.
Hardy
Evans
Tiger Butte
Calvert
Albright
B & M Siding
Logging Cr
WOLF BU.
Mid Canon
3 SISTERS
BLACK BU
Monarch
BARKER MT.
Barker
Niles
Adel
Hound Cr
Millegan
Hoover Cr
Setter
GREEN MT.
RANDALL MT.
O'NEIHART PK
LONG BALDY
BAND BOX MT.
SHEEP MT.
Neihart
HIGGINS PK
LOST FORK DIVIDE
Lost Fork
SO. FK. DIVIDE
So. Fork Judith R.
SCALE IN MILES
10 0 10 20
The Gleason Map Co. Denver Colo.

that makes the cold in Montana felt less at zero than at twenty above in humid countries. Stock run on pasture during the whole year, and are fed only a short time during the winter. The precipitation at Great Falls in 1909 was 23.17 inches, 21.89 in 1908, 22.27 in 1906, and is greater near the mountains.

Farming, mining and stock growing are the chief industries. Rough and high grounds afford excellent pasturage for live stock. The soil is fertile, and the land as a rule lies well for farming operations. In the Missouri, Sun and Belt river valleys are extensive irrigated areas. Near Cascade is Chestnut valley, a long settled and thriving farming district. One township in this neighborhood has produced 100,000 bushels of grain and much hay. The Sun river valley contains a government reclamation project and many farms that were irrigated before it was begun. The Belt valley is a large and productive section.

Far from railroads are some tracts open to homesteading, but the best opportunity for the homeseeker is to buy lands which are for sale at prices below their investment value, or to acquire a farm unit in the Sun river project. The bulk of the farm products are raised on non-irrigated land. Large crops are grown without either irrigation or cultivation by the dry land system of farming. In the northern and eastern sections dry land farming is very successful; and the yields at the experiment station near Great Falls, which are printed on another page, prove what large crops are raised without irrigation.

The prize cup for the best wheat grown in the United States was awarded at the New York Land Show of 1911 to John Todd, a Cascade county farmer, for wheat grown on unirrigateed land near Geyser. In 1912 B. J. Heaney raised on his farm near Cascade a crop of oats that threshed 192 bushels to the acre, the bushels weighing 45 pounds, says the Cascade Echo, which further says that there is no room to doubt the veracity of the report. First prizes for the best wheat and the best navy beans were won by Gus Siegeling of Armington at the Omaha Exposition of 1909; and for grains and grasses farmers from this county won 69 prizes at the Louisiana Purchase Exposition.

Common yields are from 20 to 60 bushels of wheat, 40 to 100 bushels of oats, 20 to 60 bushels of barley and of other crops in similar proportion on unirrigated farms. More uniform and usually greater are the yields on irrigated lands. Hay of timothy and alfalfa is a large crop and sugar beets have been grown as an experiment. Vegetables make surprising yields. Apples and other fruits do well.

From the census bulletin, "Statistics of Agriculture—Montana," the following figures are taken:

PRINCIPAL CROPS IN 1910.

Crop.	Acres.	Production.	Crop.	Acres.	Production.
Corn.....	199	7,968	Hay and forage, total	69,816	102,024
Oats.....	22,841	927,688	Timothy alone	19,650	25,844
Wheat....	25,875	618,637	Timothy and clover mixed....	819	1,051
Barley....	3,133	95,426	Alfalfa	14,187	36,284
Rye.....	643	12,122	Other tame and cultivated grasses (exclusive of clover alone)	829	1,074
Flaxseed..	1	14			
Dry Peas..	....	70	Grains cut green	6,365	9,619
Potatoes..	1,145	182,161	All other hay and forage.....	27,966	28,152

No official estimate of the acreage in crops is available, but the statement made in April, 1912, by Mr. Pierce, the manager of a company operating many grain elevators, is probably approximately correct. In his opinion there were in Cascade county 225,000 acres in wheat, including both winter and spring varieties; 25,000 acres in barley, 75,000 acres in flax, and 40,000 acres in oats; a total of 315,000 acres. Many farmers have found dairying profitable and over $40,000 have been invested in creameries at Great Falls, Cascade and Belt.

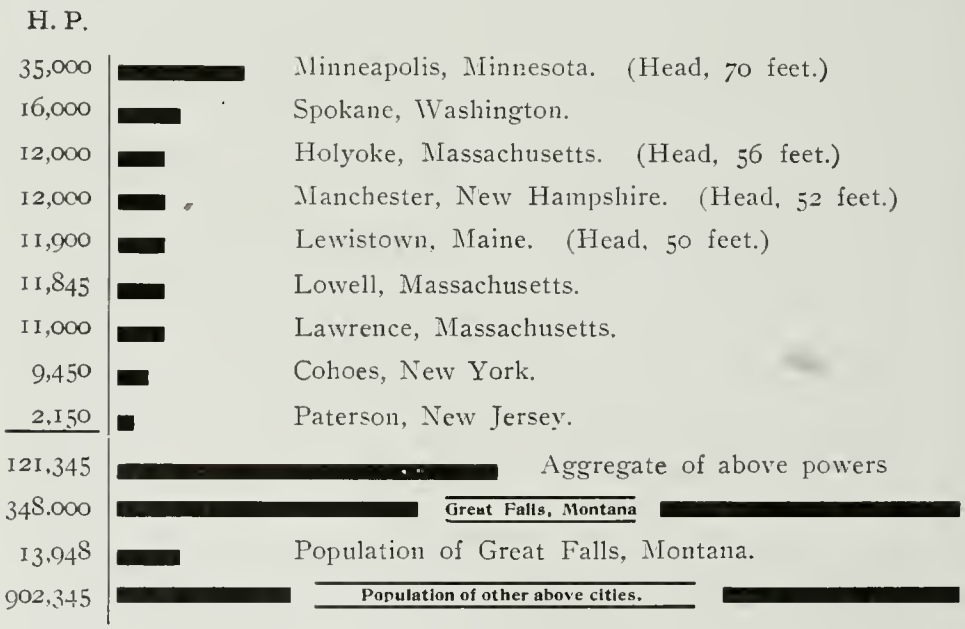
The county has great mineral wealth. In the Belt mountains are quantities of iron ore. Pure limestone abounds; and Neihart and Barker are centers of rich silver, gold and copper districts. At Armington is mined gypsum that is manufactured at Great Falls. Excellent building stone has been taken from several quarries. Coal, however, is the chief mineral. The beds are very extensive, and mines at Stockett, Belt and Sand Coulee give employment to 1,090 men. The production of the Cottonwood Coal Company at Stockett often exceeds 2,000 tons a day. The Cascade coal mines produced 996,571 tons in 1909 and 929,595 tons in 1910; 948,912 tons in 1911 of the value of $1,482,578, and 850,858 tons in 1912 valued at $1,338,975.

This rich territory is served by the Montana Central division of the Great Northern railroad which extends from Butte to Havre, by the Billings and Northern division over which Burlington trains run, by the Shelby division that connects with the main line at Shelby and extends to the boundary where it joins the Canadian line, by the Stockett branch which hauls coal from the mines at Stockett and Sand Coulee, and by the branch that runs by way of Belt to Neihart. The extension of the Great Northern railroad from Moccasin to Lewistown has placed Great Falls in direct communication with the metropolis of the Judith basin. The Great Northern has also constructed a line up Sun river to the neighborhood of Augusta and is getting ready to build to Choteau and perhaps north from that town. The Chicago, Milwaukee and Puget Sound railroad has under construction a branch that, leaving the main line in the Musselshell valley enters Lewistown and runs northwest into Great Falls; and an extension to Choteau will, it is expected, also soon be built. A railroad down Smith river from White Sulphur Springs to Great Falls is a possibility of the near future, and there have been rumors that the Soo

line has made some reconnaissances in Montana and will ultimately be constructed into Great Falls.

The principal cities are Great Falls, Belt, Stockett and Cascade. Cascade is a trading point for a rich farming and stock growing district, has city water, good schools, churches, a flour mill, two elevators, a creamery, a bank, business houses, and a weekly newspaper. Stockett has great coal mines and is surrounded by a good farming country. Belt is in a fertile valley,, has a population of nearly 1,500, has electric lights and water works, schools, elevators, hospital, churches, a bank, business houses, a weekly paper, and coal mines that have employed 400 men.

This rich country takes its name from the wonderful asset with which it is endowed. In seven and one half miles the great Missouri river, with a mean low water flow of 3,500 second feet, drops 535 feet over a series of falls and rapids. At the head of these falls, at a place where the Missouri, Sun and Belt river valleys come together, where there is a down hill haul from all directions, where all railroad lines meet, the logical location for a great city, is Great Falls, which had a population of 13,948 in 1010. The site was chosen for its natural advantages, the city was planned on generous lines, and it is the natural trading point for a great, fertile and rapidly developing section. Herewith is a comparison with water powers that have made other cities rich and populous:



Work is in progress on the development of the enormous water power at the principal fall, a few miles below the city, which involves the expenditure of over $4,000,000.

The Boston and Montana smelter employs a great number of men whose earnings contribute materially to the business of the town. It has

the largest smokestack in the world. The Royal Milling Company has a large flouring mill; there are twenty other manufacturing plants, and a mill to use flax fibre is projected. A manufactory of alfalfa products has recently been established.

Great Falls has all the improvements and conveniences of a progressive, growing, western city, and a system of large and beautiful parks that is peculiar to itself. It has a $400,000 hotel, fine public, business and residence buildings; street cars, electric lights, sewer, paved streets, parked avenues, a people confident of its future greatness, and two daily newspaper. The number of building permits issued in 1912 was 255, calling for expenditures of $635,270. It is a pleasant place of residence and a prosperous commercial city. The United States Land Office for this district and the office of the Collector of Customs for Montana are located here. Openings for manufacturing establishments and for wholesale houses are numerous.

The population of Cascade county in 1900 was 28.883. The number of voters registered in 1912 was 6,093; the number of votes cast in 1908 was 4,306. Assessed valuation for the last three years were as follows: $21,246,820 in 1910; $24,171,895 in 1911, and $24,824,366 in 1912. At the last assessment real estate and improvements were valued at $15,253,065, and personal property at $6,574,145. Horses of various classes numbered 10,273, valued at $516,096; cattle of all kinds numbered 31,484 head, valued at $669,942; sheep 135,080, valued at $277,718; and hogs of the value of $8,535. The acres of land assessed numbered 1,145,385, the average valuation being $5.24 per acre. Three telegraph lines had 539 miles of line, and ten telephone companies had 1,130 miles of wire. The only railroad in the county is the Great Northern which had 264.28 miles of track.

July 1, 1912, there were 425,230 acres of surveyed and 14,480 acres of unsurveyed, unappropriated public land in the Great Falls land district, and 9,782 acres of surveyed and 14,133 acres of unsurveyed, unappropriated public land in the Helena land district.

The secretary of the Board of Commerce at Great Falls and the secretaries of the Commercial Clubs at Belt and Cascade will supply further information about opportunities in Cascade county, on request.

FARMS AND FARM PROPERTY IN 1910, COMPILED FROM U. S. CENSUS REPORT.

Population	28,833	Average values:	
Population in 1900	25,777	All property per farm	$13,307
		Land and buildings per farm	$10,304
Number of all farms	1,502	Land per acre	$14.02
Number of all farms in 1900	1,144	Land per acre in 1900	$4.86
Color and nativity of farmers:		DOMESTIC ANIMALS. (Farms and ranges)	
Native white	859	Farms reporting domestic animals	1,383
Foreign-born white	633	Value of domestic animals	$3,782,978
Negro and all other nonwhite	10		
Number of farms, classified by size:		Cattle:	
Under 3 acres	4	Total number	67,675
3 to 9 acres	4	Dairy cows	6,233
10 to 19 acres	4	Other cows	25,604
20 to 49 acres	36	Yearling heifers	8,457
50 to 99 acres	61	Calves	7,933
100 to 174 acres	519	Yearling steers and bulls	7,511
175 to 259 acres	93	Other steers and bulls	11,937
260 to 499 acres	332	Value	$1,791,429

500 to 999 acres	222
1,000 acres and over	227
LAND AND FARM AREA.	
Approximate land area—acres	2,165,760
Land in farms—acres	1,001,534
Land in farms in 1900—acres	769,743
Improvede land in farms—acres	220,340
Improved land in farms in 1900—acres	763,319
Woodland in farms—acres	17,875
Other unimproved land in farms—acres	763,319
Per cent of land area in farms	46.2
Per cent of farm land improved	22.0
Average acres per farm	666.8
Average improved acres per farm	146.7
VALUE OF FARM PROPERTY.	
All farm property	$19,986,458
All farm property in 1900	$7,788,598
Per cent increase, 1900–1910	156.6
Land	$14,046,148
Land in 1900	$3,738,200
Buildings	$1,429,910
Buildings in 1900	$723,230
Implements and machinery	$680,206
Implements, etc., in 1900	$306,020
Domestic animals, poultry, and bees	$3,830,194
Domestic animals, etc., in 1900	$3,021,148
Per cent of value of all property in—	
Land	70.3
Buildings	7.2
Implements and machinery	3.4
Domestic animals, poultry, and bees	19.2

Horses:	
Total number	13,771
Mature horses	11,521
Yearling colts	1,805
Spring colts	445
Value	$1,273,812
Mules:	
Total number	248
Mature mules	173
Yearling colts	67
Spring colts	8
Value	$26,552
Asses and Burros:	
Number	4
Value	$2,500
Swine:	
Total number	6,807
Mature hogs	3,803
Spring pigs	3,004
Value	$60,152
Sheep:	
Total number	133,597
Rams, ewes, and wethers	123,129
Spring lambs	10,468
Value	$626,769
Goats:	
Number	141
Value	$1,784
POULTRY AND BEES.	
Number of poultry of all kinds	76,445
Value	$47,035
Number of colonies of bees	15
Value	$181

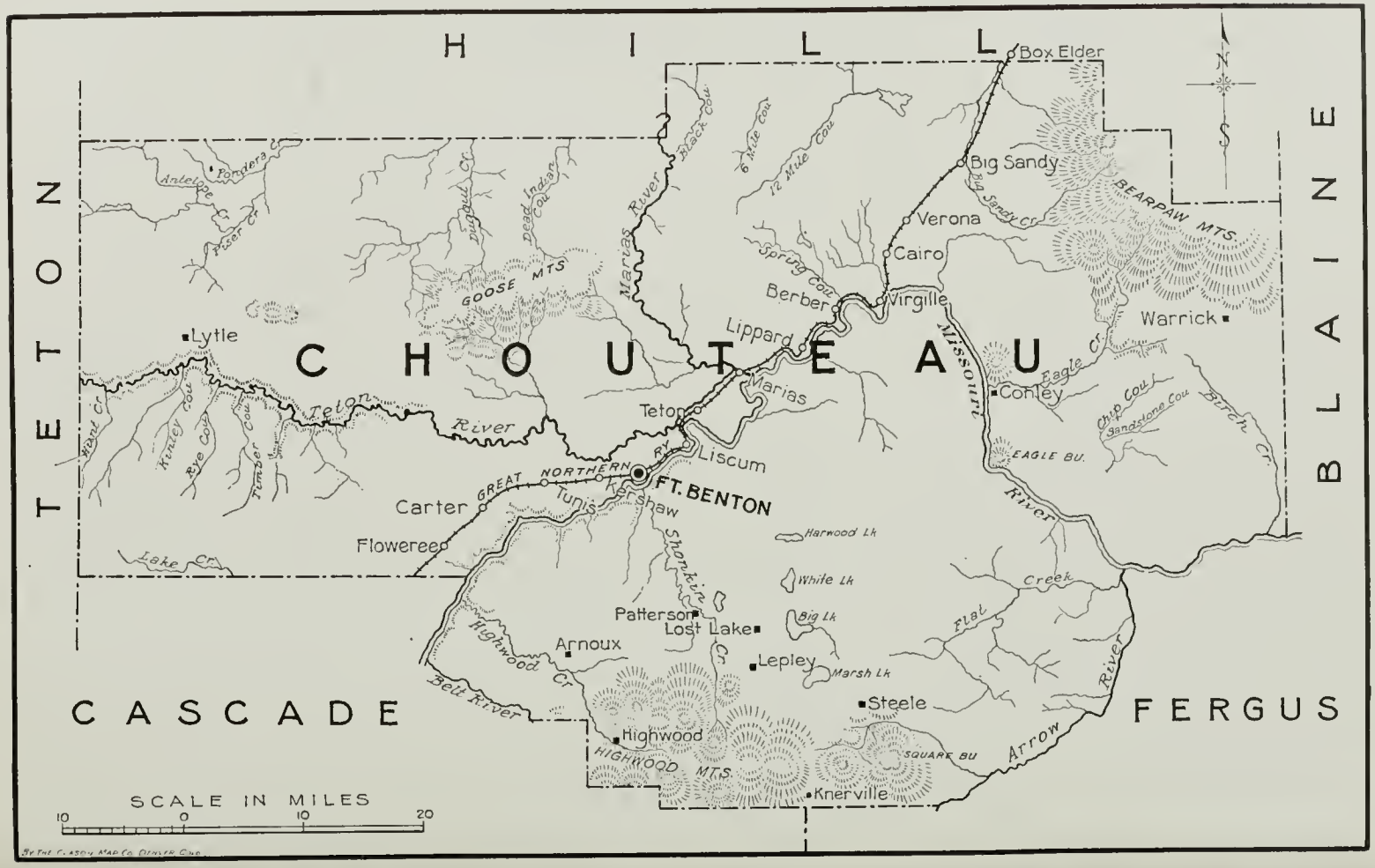
CHOUTEAU COUNTY.

Chouteau was one of the original counties of the state which has been reduced several times by the formation of new counties. In 1912 Blaine and Hill counties were formed from the eastern and northern parts respectively and Chouteau county was reduced from an area of 15,539 to one of about 4,515 square miles, besides losing the greater part of its population. The county, though so greatly reduced in size, is still very extensive and when its resources are developed the population and wealth may be greater than before the division.

The Missouri river enters Chouteau county from the south, flows northeast about sixty miles and makes its great turn to the southeast. The Teton river, coming from the west, and Marias river from the north, join the Missouri near the center of the county. Arrow river forms a part of the southeastern boundary. In the southwestern corner are the Highwood mountains in which rise Highwood and Shonkin creeks and tributaries of Belt river. In the northeastern corner is a part of the Bear Paw mountains.

The industries are stock growing and farming. This part of Montana has long been noted as a stock region and the county contains many cattle and great numbers of sheep. The native grasses are luxuriant and nutritious and the permanence of the industry is assured by the extent of good grazing lands near the mountains and along the rivers that are too rough for farming.

Farming, which until recently was relatively unimportant, has made great advances in the last three years. A limited area of land adjacent to streams is irrigated, but the chief advance in the development of agriculture


H I L L
TETON
BLAINE
CHOUTEAU
CASCADE
FERGUS
Box Elder
Big Sandy
Big Sandy Cr
BEARPAW MTS.
Verona
Cairo
Virgille
Warrick
Berber
Spring Coul
Lippard
Missouri
Eagle Cr
Conley
Chip Coul
Sandstone Coul
Birch Cr
EAGLE BU.
Marias River
Black Coul
6 Mile Coul
12 Mile Coul
Dead Indian Coul
Big Coul
GOOSE MTS
Antelope
Powders
Piser Cr
Lytle
Hand Cr
Kinley Coul
Rye Coul
Timber Coul
Teton River
Teton
Marias
Liscum
GREAT NORTHERN RY
FT. BENTON
Carter
Tunis
Shaw
Floweree
Lake Cr
Harwood Lk
White Lk
Big Lk
Patterson
Lost Lake
Arnoux
Lepley
Marsh Lk
Steele
Highwood
HIGHWOOD MTS.
SQUARE BU
Knerville
Highwood Cr
Belt River
Shonkin Cr
Flat Creek
Arrow River
SCALE IN MILES
10 0 10 20

has taken place on bench lands which are farmed without irrigation. Homesteaders have come into all parts of the county, but there is much vacant land still subject to entry.

Some large yields have been obtained by new settlers in the Arrow creek country. On unirrigated newly broken land Oscar Johnston a few years ago harvested crops as follows: Spring wheat, 31 bushels to the acre, oats 61 bushels and barley 60 bushels. A field of 141 acres of flax yielded 3,416 bushels or about 24¼ bushels to the acre. Many new settlers have gone into the country west of the Missouri and south of the Teton and into the northwestern corner to which the Shelby branch of the Great Northern affords access. An extensive country is tributary to Big Sandy. Mrs. J. R. Bell of Big Sandy planted one acre to sweet corn and netted $210 from the sale of the crop. George H. Stevens is the leading dry farmer of the county. His farm is four miles west of Fort Benton. In 1911 he planted 1,100 acres to winter wheat, 200 acres to oats and 250 acres to corn and raised good crops. In 1912 Mr. Stevens raised 23,800 bushels of wheat and 6,700 bushels of flax. He had 1,000 acres in wheat, 400 acres in flax, and 250 acres in corn. His grain when marketed netted him $26,000. "I am sometimes asked if dry land farming is a success," Mr. Stevens said to a reporter of the Helena Record last October. "Success!" he continued, "well, I should say it is, and any man who has a mind to apply his energies can go to any place in Montana where land is available, take it up, and be almost certain of a good crop every year. Of course it means work, but the man who will not work will make a failure of most any kind of an undertaking."

West of Carter the country is dotted with cabins of new settlers. The probable construction in 1913 of a railroad through the country east and north of the Highwood mountains will give a great impulse to agricultural development.

From the census bulletin, "Statistics of Agriculture—Montana," the following figures are taken:

PRINCIPAL CROPS IN 1910.

Crop.	Acres.	Production.	Crop.	Acres.	Production.
Corn.....	79	2,465	Hay and forage, total	80,821	120,561
Oats.....	16,858	680,518	Timothy alone	3,294	5,814
Wheat....	3,478	88,219	Timothy and clover mixed....	274	469
Barley....	1,163	27,231	Alfalfa	14,381	40,731
Rye.....	336	7,653	Other tame and cultivated grasses (exclusive of clover alone)	600	935
Flaxseed..	187	1,508	Grains cut green	2,967	5,355
Dry Peas..	....	30	All other hay and forage.....	59,305	67,057
Potatoes..	732	111,702			

The county seat is Fort Benton which is situated at the head of navigation on the Missouri river and on the Montana Central division of the Great Northern railroad and had a population of 1,004 in 1910. Before Montana was organized as a territory Fort Benton was an important fur trading post and for years following the gold discoveries in the early sixties was a very busy place. Steamers starting from points on the

Missouri river near where Kansas City now is brought great numbers of passengers bound for the gold fields and great quantities of freight to Fort Benton. Stage lines carried the passengers to Virginia City and other points and numerous freighting teams hauled needed supplies over long and dangerous trails to the mining centers. Fort Benton maintained its commercial importance until the coming of railroads into the state. The steamboat service on the Missouri river was abandoned when the trunk lines were completed.

Some of the present great fortunes of Montana were founded at Fort Benton in the days when it was the trading center for a great territory and the seat of large business establishments whose activities extended for hundreds of miles in all directions. The stock industry later became the dominant one. Old Fort Benton has been preserved; and many of the most interesting incidents of Montana history are associated with the town of Fort Benton.

Fort Benton, which had a population of 1,004 in 1910, is the only town of consequence. It is a place of much business importance and is surrounded by a good agricultural district. It has three churches, a hospital, two banks, hotels, general stores, a daily and two weekly newspapers, a court house and good public schools. There are many handsome private residences. The city is amply supplied with water and has a complete sewerage system.

The population of Chouteau county in 1910, which then embraced Blaine and Hill counties, was 17,191. The population at present is about 6,000. In 1912 the number of registered voters was 1,878. The total assessed valuations for 1912 were $3,795,216; real estate and improvements were valued at $1,931,880 and personal property, consisting in large part of live stock, at $1,863,336. Horses of various classes numbered 7,105, valued at $372,725; cattle of all kinds 12,523 head, valued at $256,688; sheep 217,336, valued at $410,763; and hogs of the value of $2,471.

The acres of land assessed numbered 336,179 of an average value of $3.40. Three telegraph companies had 387 miles of line, and there were 131 miles of telephone wires. The Great Northern, which is the only railroad, had 89 miles of track.

In the part of Chouteau county that is in the Great Falls land district, on July 1, 1912, there were 425,330 acres of surveyed and 14,880 acres of unsurveyed, unappropriated public land; in the part that is in the Lewistown land district there were 79,427 acres of surveyed and 13,014 acres of unsurveyed, unappropriated public land.

The agricultural statistics for Chouteau county, which are reprinted on another page from the census report, cover the territory which now is divided into Blaine, Chouteau and Hill counties.

The secretary of the Commercial Club at Fort Benton will supply further information about opportunities in Chouteau county, on request.

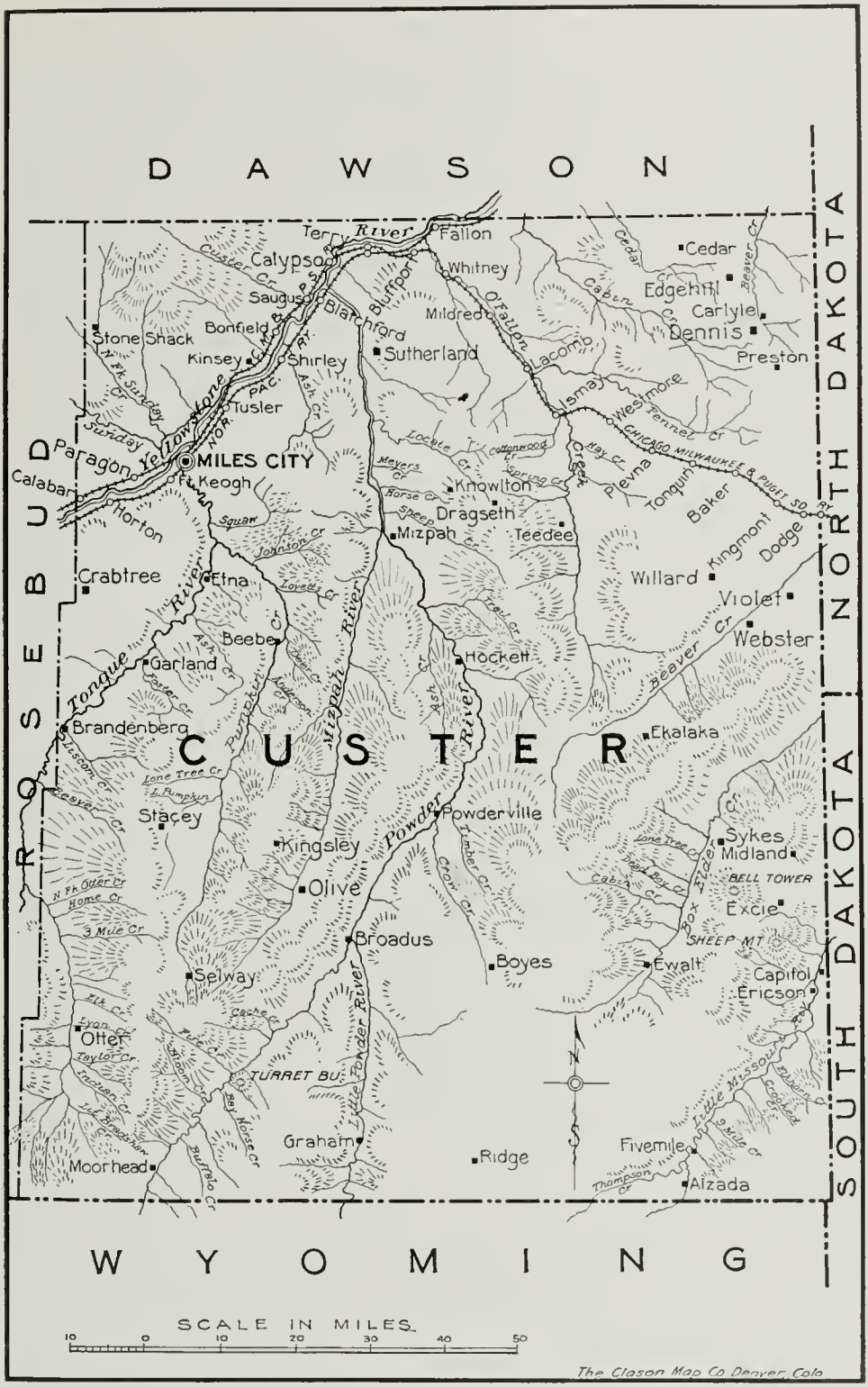
FARMS AND FARM PROPERTY IN 1910, COMPILED FROM U. S. CENSUS REPORT.
(Including the present counties of Blaine, Chouteau and Hill.)

Population	17,191
Population in 1900	10,966
Number of all farms	1,818
Number of all farms in 1900	762
Color and nativity of farmers:	
Native white	1,186
Foreign-born white	448
Negro and other nonwhite	184
Number of farms, classified by size:	
Under 3 acres	12
3 to 9 acres	1
10 to 19 acres	....
20 to 49 acres	59
50 to 99 acres	61
100 to 174 acres	450
175 to 259 acres	60
260 to 499 acres	768
500 to 999 acres	218
1,000 acres and over	189
LAND AND FARM AREA.	
Approximate land area—acres	10,222,080
Land in farms—acres	1,000,621
Land in farms in 1900—acres	546,236
Improved land in farms—acres	247,930
Improved land in farms in 1900—acres	90,242
Woodland in farms—acres	12,114
Other unimproved land in farms—acres	740,577
Per cent of land area in farms	9.8
Per cent of farm land improved	24.8
Average acres per farm	550.4
Average improved acres per farm	136.4
VALUE OF FARM PROPERTY.	
All farm property	$24,013,453
All farm property in 1900	$9 123,541
Per cent increase, 1900-1910	163.2
Land	$12,158,095
Land in 1900	$2,347,680
Buildings	$1,590,004
Buildings in 1900	$574,380
Implements and machinery	$686,862
Implements, etc., in 1900	$224,440
Domestic animals, poultry, and bees	$9,578,492
Domestic animals, etc., in 1900	$5,977,041
Per cent of value of all property in—	
Land	50.6
Buildings	6.6
Implements and machinery	2.9
Domestic animals, poultry, and bees	39.9
Average values:	
All property per farm	$13,209
Land and buildings per farm	$7,562
Land per acre	$12.15
Land per acre in 1900	$4.30
DOMESTIC ANIMALS. (Farms and ranges)	
Farms reporting domestic animals	1,517
Value of domestic animals	$9,547,799
Cattle:	
Total number	$3,509
Dairy cows	3,770
Other cows	40,082
Yearling heifers	8,246
Calves	5,515
Yearling steers and bulls	7,632
Other steers and bulls	16,198
Value	$2,378,872
Horses:	
Total number	27,226
Mature horses	19,484
Yearling colts	3,399
Spring colts	803
Value	$2,074,009
Mules:	
Total number	192
Mature mules	118
Yearling colts	65
Spring colts	9
Value	$20,321
Asses and Burros:	
Number	3
Value	$1,850
Swine:	
Total number	2,982
Mature hogs	1,746
Spring pigs	1,236
Value	$27,541
Sheep:	
Total number	946,393
Rams, ewes, and wethers	905,628
Spring lambs	40,765
Value	$5,044,852
Goats:	
Number	64
Value	$254
POULTRY AND BEES.	
Number of poultry of all kinds	46,772
Value	$30,497
Number of colonies of bees	11
Value	$196

CUSTER COUNTY.

Custer county includes the southeastern part of Montana and is a very large county, having an area of 12,915 square miles. It was organized in 1867 when the name of Big Horn county, created by act of the territorial legislature in 1865, was changed to Custer county. The Yellowstone river flows through the northwestern part and Powder and Tongue rivers, two large streams which rise in Wyoming, drain the southern part. The Little Missouri river crosses the southeastern corner, and O'Fallon creek has a long course through the northwestern part of the county. Mizpah river is an important affluent of Powder river and Pumpkin creek of Tongue river. All of these streams have valleys of varying width back from which are extensive stretches of bench lands.

Custer is the leading stock county of Montana, and from it have probably been shipped more horses, cattle, sheep and pounds of wool than


DAWSON
ROSEBUD
CUSTER
NORTH DAKOTA
SOUTH DAKOTA
WYOMING
MILES CITY
Terry
Fallon
Calypso
Whitney
Cedar
Edgehill
Carlyle
Dennis
Preston
Saugus
Bonfield
Stone
Shack
Kinsey
Shirley
Sutherland
Mildred
Lacomb
Ismay
Westmore
Tusler
Paragon
Calabar
Horton
Ft. Keogh
Knowlton
Dragseth
Mizpah
Teedee
Plevna
Tonquin
Baker
Kingmont
Dodge
Willard
Violet
Webster
Crabtree
Etna
Beebe
Garland
Hockett
Brandenberg
Ekalaka
Stacey
Powderville
Kingsley
Olive
Sykes
Midland
Excie
Broadus
Boyes
Ewalt
Capitol
Ericson
Selway
Otter
Graham
Moorhead
Ridge
Fivemile
Alzada
Tongue River
Powder River
Little Powder River
Mizpah River
Ash Cr.
Beaver Cr.
Cedar Cr.
Cabin Cr.
Custer Cr.
Sunday Cr.
Yellowstone
Pumpkin Cr.
Lone Tree Cr.
Timber Cr.
Crow Cr.
Home Cr.
3 Mile Cr.
Cache Cr.
Squaw Cr.
Johnson Cr.
Lovell Cr.
Trail Cr.
Horse Cr.
Sheep Cr.
Meyers Cr.
Locke Cr.
Cottonwood Cr.
Spring Cr.
Hay Cr.
Foster Cr.
Lyon Cr.
Taylor Cr.
Big Horse Cr.
Buffalo Cr.
Thompson Cr.
Little Missouri
Box Elder Cr.
9 Mile Cr.
Bell Tower
Sheep Mt.
Turret Butte
Chicago Milwaukee & Puget Sd. Ry.
SCALE IN MILES
10 0 10 20 30 40 50
The Clason Map Co. Denver, Colo.

from any other county in the United States. Miles City is the greatest primary horse market in the northwest. The stockyards embrace 50 acres and monthly auctions are held during the season. Every year about 25,000 of the strong, hardy, full sized horses for which Montana is noted are sold here to buyers from many parts of the country. Adjacent to Miles City is Fort Keogh, an army remount station, where many horses are yearly bought and trained for the cavalry service.

The mean temperature is 44, the same as Wisconsin; the altitude is about 2,300 feet; severe storms are rare; the air is dry, and heat and cold are not felt as in humid regions; in an average year 175 days are clear, 125 partly cloudy, 65 cloudy and 80 rainy. The normal rainfall, about 15 inches, is sufficient for all properly cultivated crops. More than half of it falls during the growing season. Cottonwood and ash grow near streams and pine and cedar in the hills. The county is underlaid with lignite coal which provides cheap fuel.

Good water is abundant in wells at depth of from 12 to 25 feet in the valleys and of 25 to 200 feet on the benches. Several large irrigating canals furnish water for about 61,000 acres and others are proposed. Irrigated lands may be bought at low prices compared with what similar land sells for in other states.

Nearly every grain, vegetable and fruit known in the northern part of the United States grows in Custer county. Oats, wheat, barley, rye, corn, cabbages, rutabagas, pumpkins, squash, egg-plant, cauliflower, tomatoes, cucumbers, peppers, radishes, peas, beans, celery, asparagus, make a partial list. Watermelons have a flavor and crispness that are unequalled, contaloupes grow to perfection, and strawberries are of fine flavor, color and size. Peaches, pears, apples, crab-apples, gooseberries, currants and raspberries do well. There is a home market for fruit and vegetables and an unsupplied demand for alfalfa, dairy products, eggs and chickens.

Horses, cattle and sheep thrive on alfalfa, which is the leading crop, and sells at from $5 to $12 a ton; an acre, cut three times a year, yields from four to five tons. Oats yield from 50 to 100 bushels an acre, barley does well, and 50 bushels of club wheat is an average yield.

The transformation of Custer county from a stock to a farming country is proceeding with astonishing rapidity. The railroads follow water grades; and when one enters the Yellowstone valley he does not realize that he is entering one of the most fertile agricultural regions in the world. An observer has aptly written:

"You cannot glimpse the good broad level prairies from a car window; you cannot see many of the best farms from the railroad; but once you get away from the railroad you will find good plow land on every hand, and, naturally, the further away you go, the more plentiful is the unoccupied land. One writer who made the trip across Custer County and wrote a description of it for his eastern friends summed up the whole situation in these words: 'It is simply an expanse of fine soil—new, undeveloped, unpeopled—pregnant with possibilities and awaiting only the creative hand of man to bring forth into reality that state of agricultural opulence which signifies the attainment of the ideal In one single word it is—opportunity.

The yields at the three experiment farms in Custer county are printed elsewhere. Equal or better results have been obtained on bench lands in various parts of the county.

Upon the extensive areas of irrigated land in the Yellowstone and other valleys most prolific crops of grains and grasses and vegetables are grown. Alfalfa is a leading crop. Corn makes large yields. Fruits of all kinds do well.

The extension of farming to the bench lands and the success which has followed the efforts of pioneers in this line has transformed a part of this great county from a grazing to a farming region. In all townships near existing railroad lines and in some remote from them will be found new settlers; and some old stockmen, even, who have caught the new spirit, have plowed fields and planted and harvested good crops of grain.

On Fort Keogh military reservation Captain Howard has raised a large acreage of excellent crops without irrigation. Carlyle, in Beaver creek valley, in the northeastern corner, is the center of a most prosperous farming region. All along the line of the Milwaukee railroad are productive new farms. On the bench land south of Terry is a large area of cultivated land which produces great quantities of grain and flax. Everywhere are new farms, but so great is the extent of the county that ten thousand settlers may find good farms on the unoccupied lands of Custer county.

Last year J. E. McFarland, of Preston, wrote to this bureau as follows:

"I am writing you a few lines in regard to my opinion of this country as a farming country. I think it one of the best in the world for a poor man to get a start; it will have to be an awful poor year that a man cannot make more than enough to pay expenses. I have been here for four years. We have had two what are considered poor years in this country but I am still four thousand dollars ahead of the game. I was born and raised in Greenbrush, Minn. That is a good farming country, but I can make more money in one year here than I can in ten there and not have to work the year round to do it. There is still some land subject to homestead entry near here. Raw land is worth about $25 per acre and improved land about $10 more. There is plenty of fuel to be had for the hauling and the water is good with a few exceptions."

This year the bureau received the following letter from Martin C. Anderson of Miles City:

"Two years ago (July 4, 1910), I read an advertisement in Chicago about Montana. I can now first see the truth in said picture. Yes, sir. I see the truth. One of my neighbors had sixty acres of oats this year, yield from 50 to 80 bushels. He is selling oats at $1.25 a hundred pounds, and we live 65 miles from a railroad. He could dispose of more than he can spare. That is plowing the dollars out all right. I had five acres in flax this year; very nice crop; haven't thrashed yet. I came out here without hardly anything, having spent my money trying to learn the American language. I worked out in the summers and went to college two winters; immigrated from Denmark six years ago. Spent two years in Chicago, two years in Nebraska, and the last two years in Montana mostly. I have found that the man who works out received from 25 to 35 per cent more for his labor in Montana than in either of the other two states. Thus I say, Montana for the laboring man."

From the census bulletin, "Statistics of Agriculture—Montana," the following figures are taken:

PRINCIPAL CROPS IN 1910.

Crop.	Acres.	Production. (Bushels)	Crop.	Acres.	Production. (Tons)
Corn.....	2,755	71,282	Hay and forage, total	41,784	49,613
Oats.....	11,183	399,398	Timothy alone	623	380
Wheat....	5,747	121,493	Timothy and clover mixed....	38	82
Barley....	726	14,284	Alfalfa	6,528	13,697
Rye.....	155	3,289	Other tame and cultivated grasses (exclusive of clover alone)	1,047	1,055
Flaxseed..	6,450	88,454	Grains cut green	3,072	3,939
Dry Peas..	....	1	All other hay and forage.....	30,476	30,460
Potatoes..	956	85,688			

The chief towns are Miles City, Terry, Fallon, Ismay, Baker and Ekalaka. In the southeastern part, fifty miles from the railroad, is Ekalaka, the center of a great stock country and the trading point for a large region. Baker, a new and flourishing town on the Milwaukee railroad from which large quantities of grain are shipped, is in the midst of a large prairie country into which many settlers have come, and has good business buildings and residences, a weekly newspaper, and a lake that adds to its attractiveness. Ismay on the same road has made similar growth, and has perhaps more costly buildings. Fallon, in the Yellowstone valley, is a supply point for an established farming district and for a region of bench lands that is being turned into farms. Terry, the second city in population and business importance, located where the line of the Milwaukee crosses the Northern Pacific, has experienced a decided growth since the construction of the former road, has elevators, business houses, banks, a weekly newspaper and is surrounded by a productive agricultural country. An expensive bridge crosses the Yellowstone and affords access to a large region on the north side that contains much good farming lands.

The metropolis for all this great, undeveloped empire is Miles City, the county seat, located at the junction of the Tongue and Yellowstone rivers, an up-to-date, growing, progressive western town of 4,697 people in 1910. There are two daily and three weekly newspapers, a number of manufacturing establishments, many wholesale and retail stores. It is the distributing point for a large and developing territory, ships more horses, cattle, sheep and wool than any other town of its size in the country, and is a division point on the Chicago, Milwaukee and Puget Sound railroad whose large monthly pay roll contributes to its prosperity. It is expected that a railroad will be built from Sheridan, Wyoming, to Miles City that will open up a rich country. There are three banks with deposits of about $4,000,000, two clubs, two first class hotels and a number of small ones, four churches, two public schools, a Carnegie library, a Catholic convent school, a grain elevator, and municipal water works and electric light plant. Many opportunities exist for the investment of capital in manufacturing and other enterprises.

The population of Custer county was 7,891 in 1900 and 14,123 in 1910, an increase of 79 per cent, notwithstanding that the territory forming Rosebud county had been taken from it in 1901. The population is growing

rapidly; in 1908 the votes cast for president were 1,590 and in 1912 the registered voters numbered 4,917. Assessed valuations for the last three years were as follows: $17,557,709 in 1910; $18,254,261 in 1911; and $18,112,495 in 1912. At the last assessment real estate and improvements were valued at $9,852,898 and personal property, consisting in large part of live stock, at $4,862,699. Horses of various classes numbered 32,047, valued at $1,291,293; cattle of all kinds 58,295 head, valued at $1,174,261; sheep 264,577 valued at $537,892, and hogs of the value of $9,233. The total acres of land assessed numbered 2,085,086 of an average value of $3.21. Two telegraph companies had 206 miles of line and three telephone companies had 246 miles of wire. Two transcontinental railroad lines cross the county. The Northern Pacific railroad had 92.62 miles of track and the Chicago, Milwaukee and Puget Sound railway 165.39 miles.

Custer county is in the Miles City land district and July 1, 1912, there were 1,640,849 acres of surveyed and 2,171,278 acres of unsurveyed, unappropriated public land.

The secretaries of the Commercial clubs at Baker, Ekalaka, Fallon, Miles City and Terry will supply further information about opportunities in Custer county, on request.

FARMS AND FARM PROPERTY IN 1910, COMPILED FROM U. S. CENSUS REPORT.

Population	14,123
Population in 1900	7,891
Number of all farms	1,622
Number of all farms in 1900	804
Color and nativity of farmers:	
Native white	1,318
Foreign-born white	304
Negro and other nonwhite	....
Number of farms, classified by size:	
Under 3 acres	33
3 to 9 acres	4
10 to 19 acres	3
20 to 49 acres	15
50 to 99 acres	22
100 to 174 acres	599
175 to 259 acres	65
260 to 499 acres	571
500 to 999 acres	158
1,000 acres and over	152
LAND AND FARM AREA.	
Approximate land area—acres	8,419,840
Land in farms—acres	931,581
Land in farms in 1900—acres	642,563
Improved land in farms—acres	124,607
Improved land in farms in 1900—acres	90,359
Woodland in farms—acres	30,946
Other unimproved land in farms—acres	776,028
Per cent of land area in farms	11.1
Per cent of farm land improved	13.4
Average acres per farm	574.3
Average improved acres per farm	76.8
VALUE OF FARM PROPERTY.	
All farm property	$20,142,322
All farm property in 1900	$9,652,145
Per cent increase, 1900-1910	....
Land	$10,219,621
Land in 1900	$1,915,430
Buildings	$1,043,997
Buildings in 1900	$428,780
Implements and machinery	$534,125
Implements, etc., in 1900	$170,610
Domestic animals, poultry, and bees	$8,344,579
Domestic animals, etc., in 1900	$7,137,325

Average values:	
All property per farm	$12,418
Land and buildings per farm	$6,944
Land per acre	$10.97
Land per acre in 1900	$2.98
DOMESTIC ANIMALS. (Farms and ranges)	
Farms reporting domestic animals	1,497
Value of domestic animals	$8,318,710
Cattle:	
Total number	113,104
Dairy cows	3,263
Other cows	50,017
Yearling heifers	12,493
Calves	7,810
Yearling steers and bulls	10,973
Other steers and bulls	26,688
Value	$3,343,972
Horses:	
Total number	31,704
Mature horses	25,843
Yearling colts	4,775
Spring colts	1,086
Value	$2,305,861
Mules:	
Total number	206
Mature mules	177
Yearling colts	28
Spring colts	1
Value	$19,045
Asses and Burros:	
Number	5
Value	$4,500
Swine:	
Total number	2,307
Mature hogs	1,646
Spring pigs	661
Value	$25,373
Sheep:	
Total number	502,307
Rams, ewes and wethers	457,361
Spring lambs	44,943
Value	$2,619,944

Per cent of value of all property in—	
Land	50.7
Buildings	5.2
Implements and machinery	2.7
Domestic animals, poultry, and bees	41.4

Goats:	
Number	2
Value	$15
POULTRY AND BEES.	
Number of poultry of all kinds	34,300
Value	$23,169
Number of colonies of bees	464
Value	$2,700

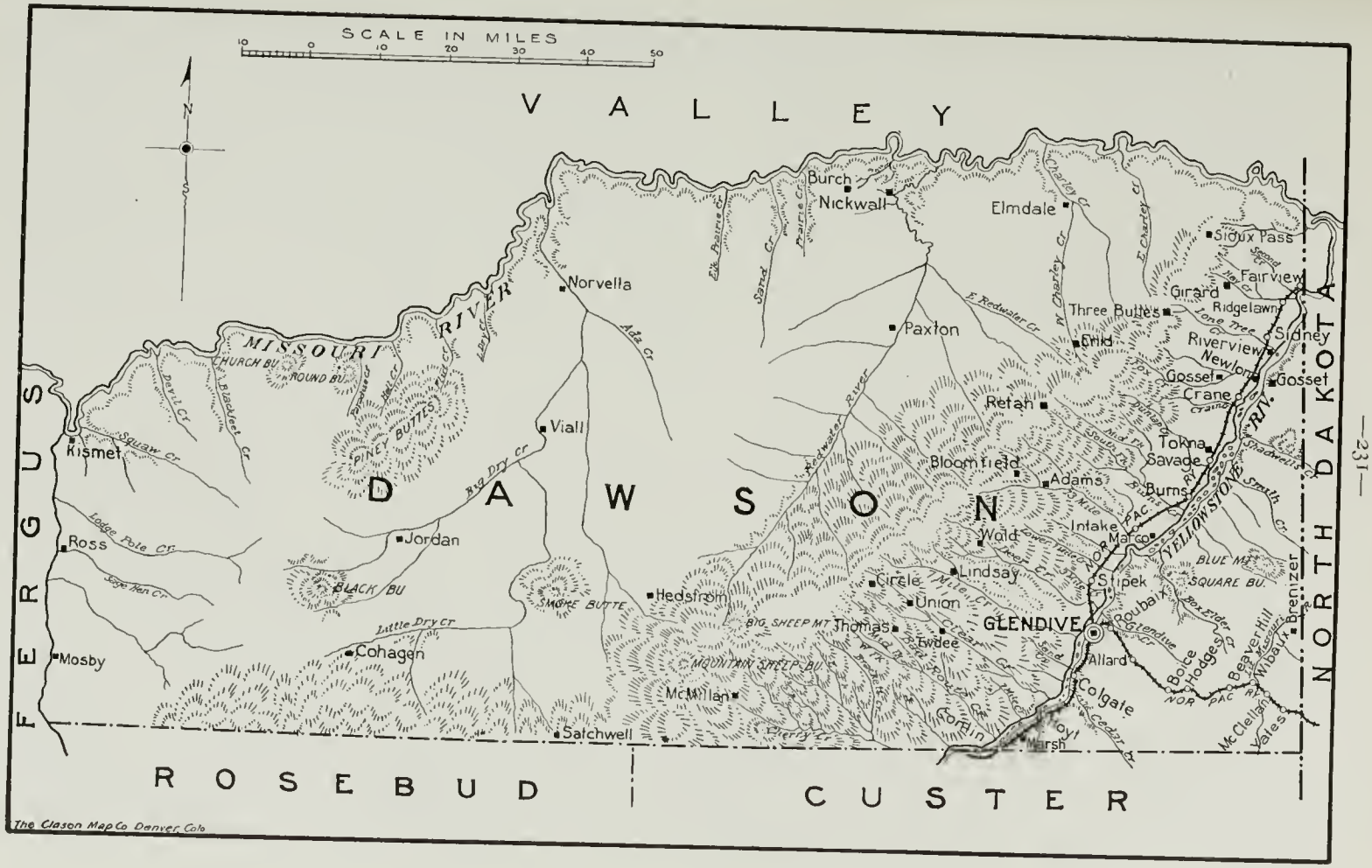
DAWSON COUNTY.

Dawson county, organized in 1869 and named for Andrew Dawson, for many years a leading man in the fur trade, is the gateway of Montana for those who enter by the Northern Pacific railroad. It is an immense county having an area of 13,231 square miles, consisting for the most part of prairies, bench lands and hills, including, also, a considerable quantity of bad lands. There are no mountain ranges although the Mountain Sheep hills parallel the Yellowstone river in the eastern part of the county and form a divide betweeen the drainage basin of the Yellowstone and the much larger area that drains into the Missouri river. The Musselshell river is the western, and the Missouri river the northern boundary. Big Dry and Red Water creeks which empty into the Missouri river have extensive drainage basins. The Yellowstone river flows through the southeastern part of the county, receives the waters of numerous short streams, and includes in its valley nearly all of the irrigated land. The principal towns and farming districts are in the Yellowstone drainage basin.

Stock growing was the first occupation of the settlers in Dawson county and remains a leading industry. Perhaps one-fourth of the entire acreage is too rough to be farmed and will always be devoted to grazing. Agriculture was first followed as a business in the Yellowstone valley where many thousand acres are irrigated from ditches taken from the river and from lateral streams. One of the largest reclamation enterprises of the govenment is the Lower Yellowstone project which is treated of on another page. Water is taken from the Yellowstone river to irrigate a great acreage of land in Dawson county, Montana, and McKenzie county, North Dakota. The reclaimed lands on this project have, in large part, been settled upon and prolific crops are raised. Fairview, Sidney, Newlon, Savage and other flourishing towns have sprung up in this section and a branch line of the Northern Pacific railroad has been built from Glendive to provide transportation facilities. The New Rockford-Lewistown branch of the Great Northern railroad will soon penetrate this region and it is expected that the Soo railroad will also enter it.

The greatest advance, however, has been in the increase in the acres farmed without irrigation, so-called dry land farms. On another page are printed the results at the Dawson County Experiment Station, located at Bloomfield, thirty-one miles northwest of Glendive, on a piece of land that is representative of many thousands of acres in this county.

Farming without irrigation is a demonstrated success not only at the experiment station but on farms of thousands of new settlers who have filed on homesteads and have transformed a part of the vast range into productive grain fields. Large stock ranches also have been sub-divided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MISSOURI RIVER
YELLOWSTONE R.
Burch
Nickwall
Elmdale
Sioux Pass
Fairview
Girard
Ridgelawn
Sidney
Riverview
Newlon
Gosset
Crane
Norvella
Paxton
Three Buttes
Child
Retah
Viall
Kismet
Squaw Cr
Ross
Lodge Pole Cr
Jordan
Big Dry Cr
Little Dry cr
Mosby
Cohagen
Satchwell
Hedstrom
Smoke Butte
Big Sheep Mt
Mountain Sheep Bu
McMillan
Thomas
Ewdee
Circle
Union
Lindsay
Wold
Intake
Marco
Bloomfield
Adams
Burns
Tokna
Savage
Stipek
Square Bu
Blue Mt
Goubaix
GLENDIVE
Allard
Colgate
Fox Fider
Beaver Hill
Wibaux
Brenizer
Bolce
Hodges Cr
McClellan
Vales
Joyt
Marsh
Fallon
Cedar Cr
Sand Cr
Prairie Cr
E. Charley Cr
N. Charley Cr
E. Redwater Cr
Redwater River
Ada Cr
Church Bu
Round Bu
Pine Buttes
Black Bu
Devil Cr
Backfeet Cr
Big Dry Cr
Lone Tree
Mud Cr
Smith Cr
Shadwell Cr
Box Elder
Sand Cr
Cedar Cr
The Clason Map Co. Denver, Colo.

and sold as farms and many acres of Northern Pacific railroad lands have been put into cultivation.

Mr. E. C. Leonard has compiled the records of rainfall at Glendive for the last 21 years and finds that the average annual precipitation for the entire period was 15.54 inches. At places the rainfall is higher and everywhere it is sufficient when properly conserved. The evaporation is much lower than in states farther south and the timeliness of the rainfall increases its efficiency. Of the total of 15.54 inches of precipitation at Glendive 10.72 inches falls during the crop growing season, as follows: March, 1.32 inches; April, 1.10 inches; May, 2.29 inches; June, 3.39 inches; July, 1.78 inches; and August, .84 inches.

At various exhibitions Dawson county products have won many prizes. At the Northwestern Land Products Exposition held at Minneapolis in 1912 the first prize for the best bushel of flax grown in the seven northwestern states was won by E. C. Leonard of Glendive. The prize was $50 in gold offered by the Midland Linseed Company. At the Dry Farming Congress of 1911, the first prize for potatoes, a gold medal, was awarded to H. E. Murphy for potatoes grown near Glendive. At the Dry Farming Congress of 1909 Dawson county won 43 premiums including the first prize in grand sweepstakes, open to the world, for the best general exhibition of agricultural products.

Wheat, oats, rye, barley, flax and alfalfa are the chief crops. Yields are reported of oats 100 bushels to the acre, flax 34 bushels, barley 42 to 60 bushels, wheat 50 bushels, and corn 45 bushels. The flax record for the United States is claimed for Sam Sansburn of Bloomfield who grew on seven acres of accurately surveyed land 231 bushels of flaxseed. From all parts of the county have been collected reports of high yields on large fields of all staple crops. It is estimated that not over 440,000 are now in cultivation and that in two years a million acres may be producing crops. But there will still remain to be brought into cultivation over 5,000,000 acres of farm land.

From the census bulletin, "Statistics of Agriculture—Montana," the following figures are taken:

PRINCIPAL CROPS IN 1910.

Crop.	Acres.	Production. (Bushels)	Crop.	Acres.	Production. (Tons)
Corn.....	2,762	78,488	Hay and forage, total	45,704	38,615
Oats.....	25,547	916,009	Timothy alone	59	83
Wheat....	19,331	404,436	Timothy and clover mixed....	13	16
Barley....	1,493	43,092	Alfalfa	878	1,687
Rye.....	51	843	Other tame and cultivated grasses (exclusive of		
Flaxseed..	13,553	171,413	clover alone)	516	415
Dry Peas ..	....	140	Grains cut green	1,739	2,390
Potatoes..	821	98,466	All other hay and forage.....	42,499	34,024

The great area of virgin land will be made available for profitable farming by the construction of lines of railroad through regions now distant from transportation facilities. The Great Northern railroad will build its New Rock-ford Lewistown branch from the eastern to the western

boundary of Dawson county penetrating the central part. Work will probably begin on this line in the spring of 1913, although no definite statement of the time of beginning has been made by the authorities of the company. The Glendive-Helena cut-off of the Northern Pacific to extend from Glendive to a point of junction with the Great Northern railroad at a point in Fergus or Meagher counties and thence to Helena on a common track is a probability of the near future. The president of the Soo Railway Company was in Montana last summer and it is said that the company is getting ready to build into the state so as to get a share of the business that originates in this rich and developing part of the country; and it is believed that if such a line is built it will cross the whole width of Dawson county, but nothing definite on the subject has been made public.

The county is underlaid with coal which is sold at low prices in the towns; and the farmer who has not opened a deposit of coal on his own place is able to obtain a supply from some coal bank in his neighborhood.

The principal towns are Glendive and Wibaux. Savage, Sidney, Newlon and Fairview are new towns on the Lower Yellowstone project, and Circle, Lindsay and Jordan are trading points in the interior. The county seat is Glendive, whose population in 1910 was 2,428, according to the census, and is now said to be 4,000. It is a division point on the Northern Pacific railroad which employs about 800 men with a monthly pay roll of $65,000. The Northern Pacific hospital has recently been completed at a cost of $125,000. Glendive is a progressive, growing town, is well lighted, has large business blocks, banks, hotels, newspapers, fine public buildings, attractive residences, and has spent about a million dollars on municipal improvements in the past two years. Thirty miles east of Glendive is Wibaux, a thriving town of about 800 people which is located in Beaver valley, one of the richest farming sections of the state. Wibaux has large business houses, elevators, banks, churches, schools, two newspapers, and is the trading point for an extensive country. From Wibaux are shipped every year many carloads of live stock and great quantities of grain. Up to the middle of December, 1912, the elevators at Wibaux had taken in 435,000 bushels of grain, about one-half the production of the county that ships from that station.

The population of Dawson county was 2,443 in 1900 and 13,231 in 1910, an increase of 442 per cent. The votes cast in 1908 numbered 1,453, and the voters registered in 1912, 4,955. Assessed valuations for the last three years were as follows: $7,965,189 in 1910; $9,927,246 in 1911; and $10,555,584 in 1912. At the last assessment real estate and improvements were valued at $5,749,857 and personal property, including live stock, at $3,500,654. Horses of various classes numbered 24,807, valued at $1,214,264; cattle of all kinds 24,928, valued at $494,561; sheep 298,242, valued at $564,374, and hogs of the value of $6,888. The total acres of land assessed numbered 1,802,749 of an average value of $2.21. One telegraph company had 63 miles of line, and three telephone companies had 180 miles of wire.

The Northern Pacific railroad, the only railroad, has 92.87 miles of track.

In Dawson county, July 1, 1912, there were 923,673 acres of surveyed and 1,666,949 acres of unsurveyed, unappropriated public land in the Miles City land district; 182,847 acres of surveyed and 300,347 acres of unsurveyed, unppropriated public land in the Lewistown land district; and 184,300 acres of surveyed and 1,058,391 acres of unsurveyed, unappropriated public land in the Glasgow land district; a total for the county of 4,316,507 acres of unappropriated public land.

The secretary of the Dawson County Development League, Glendive, or the secretary of the Commercial Club at any of the towns, will supply further information about opportunities in Dawson county, on request.

FARMS AND FARM PROPERTY IN 1910, COMPILED FROM U. S. CENSUS REPORT.

Population	12,725
Population in 1900	2,443
Number of all farms	1,947
Number of all farms in 1900	259
Color and nativity of farmers:	
Native white	1,476
Foreign-born white	470
Negro and other nonwhite	1
Number of farms, classified by size:	
Under 3 acres	53
3 to 9 acres	....
10 to 19 acres	....
20 to 49 acres	12
50 to 99 acres	22
100 to 174 acres	926
175 to 259 acres	74
260 to 499 acres	714
500 to 999 acres	84
1,000 acres and over	62
LAND AND FARM AREA.	
Approximate land area—acres	8,467,840
Land in farms—acres	607,078
Land in farms in 1900—acres	56,402
Improved land in farms—acres	183,163
Improved land in farms in 1900—acres	19,645
Woodland in farms—acres	12,157
Other unimproved land in farms—acres	411,758
Per cent of land area in farms	7.2
Per cent of farm land improved	30.2
Average acres per farm	311.8
Average improved acres per farm	94.1
VALUE OF FARM PROPERTY.	
All farm property	$16,589,852
All farm property in 1900	$2,947,746
Per cent increase, 1900-1910	462.8
Land	$8,770,220
Land in 1900	$124,340
Buildings	$906,932
Buildings in 1900	$119,430
Implements and machinery	$695,237
Implements, etc., in 1900	$56,960
Domestic animals, poultry, and bees	$6,217,463
Domestic animals, etc., in 1900	$2,647,016
Per cent of value of all property in—	
Land	52.9
Buildings	5.5
Implements and machinery	4.2
Domsetic animals, poultry, and bees	37.5
Average values:	
All property per farm	$8,521
Land and buildings per farm	$4,970
Land per acre	$14.45
Land per acre in 1900	$2.20
DOMESTIC ANIMALS. (Farms and ranges)	
Farms reporting domestic animals	1,765
Value of domestic animals	$6,191,066
Cattle:	
Total number	36,451
Dairy cows	3,150
Other cows	13,198
Yearling heifers	3,732
Calves	2,497
Yearling steers and bulls	3,081
Other steers and bulls	6,407
Value	$1,073,819
Horses:	
Total number	28,234
Mature horses	22,183
Yearling colts	3,841
Spring colts	1,179
Value	$2,608,312
Mules:	
Total number	67
Mature mules	63
Yearling colts	4
Spring colts	....
Value	$11,350
Asses and Burros:	
Number	2
Value	$45
Swine:	
Total number	2,735
Mature hogs	1,751
Spring pigs	984
Value	$32,204
Sheep:	
Total number	454,530
Rams, ewes, and wethers	435,708
Spring lambs	18,822
Value	$2,465,186
Goats:	
Number	15
Value	$150
POULTRY AND BEES.	
Number of poultry of all kinds	44,523
Value	$26,372
Number of colonies of bees	5
Value	$25

DEER LODGE COUNTY.

Deer Lodge county, which is in western Montana, is drained by Deer Lodge river, and embraces a part of the valley of that stream, was one of the original counties of the territory. By the formation of new counties it has lost the greater part of its original area and is now a small county having only 748 square miles and yet is one of the richest.

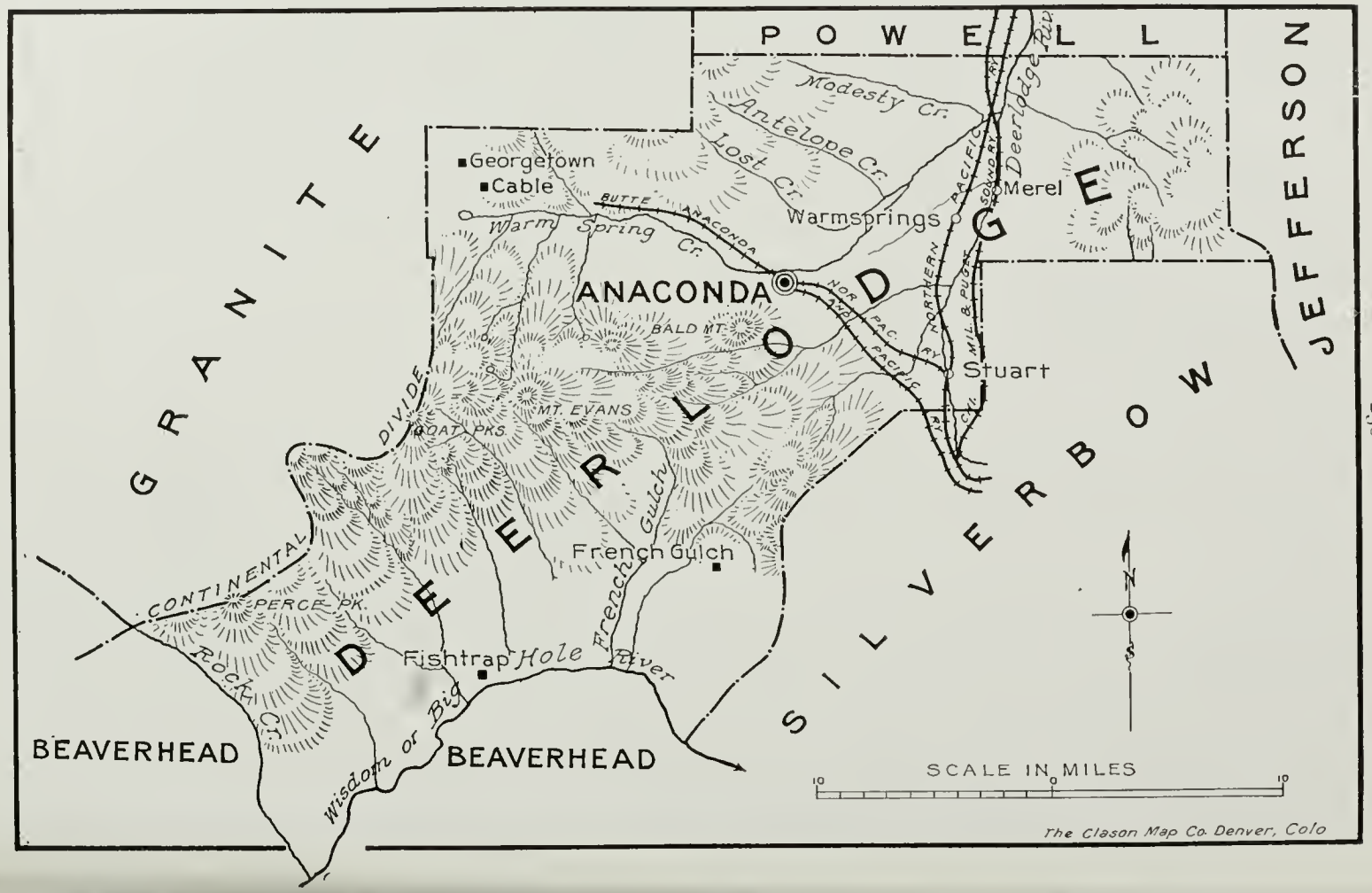
The chief industry is copper smelting. At Anaconda is located the Washoe Smelter of the Anaconda Copper Company which was erected at a cost of $7,500,000, employs about 2,000 men and has a monthly pay-roll of about $215,000. This great smelter is the largest and most modern copper reducing plant in the world and smelts about one-fourth of the copper produced in the United States. The ores are brought from the mines at Butte, 28 miles distant, directly to the smelter by the Butte, Anaconda and Pacific railroad, which was built for this traffic. Even after an inspection of the smelter one can scarceely comprehend the immensity of its operations. It is running full capacity, and every day treats about 10,000 tons of copper ore, consuming in the process about 2,300 tons of lime rock and using 650 tons of coke, 500 tons of coal for reverbatory use, 500 tons of coal for power use and 35,000 gallons of water per minute.

Constant progress is made in reducing the cost of production of copper by lessening the cost of getting out ore at the mines and in treating it at the smelters. Large savings have recently been effected by the increased use of electrical power; and the mines of Butte and the smelters of Anaconda and Great Falls are models of efficient operation, while the wage scale is the highest in America.

Anaconda, the county seat, owes its existence to Marcus Daly, a founder of the copper industry in Montana, who was attracted to it by the presence so near Butte of an abundant supply of water. It has grown into a city of 10,134 inhabitants, is an attractive place of residence, has one of the most costly hotel edifices in the state, many large business blocks, handsome dwellings, a daily newspaper, and manufactories of fire and building brick. The county court house, the Hearst library and the Margaret theatre would be notable buildings in a much larger city. The Montana State Fish Hatchery is located in beautiful Washoe Park.

Population and business of Deer Lodge county are chiefly centered in the city of Anaconda, which is situated at the base of the mountains. In the mountain regions are placer and quartz gold mines, extensive forests and many places of much scenic beauty. The Butte, Anaconda and Pacific railroad has recently been extended into the mineral region near Georgetown which is expected to develop into a very productive mining district.

At Warm Springs is located the State Hospital for the Insane, which was under private control until the state acquired the property for the sum of $533,000 in accordance with the vote cast at the election of 1912 on the referendum proposition. Besides numerous buildings designed and equipped for the hospital for the insane, the state takes over the valuable warm springs and 1,352 acres of ground, upon which the former owners


POWELL
GRANITE
JEFFERSON
SILVER BOW
DEER LODGE
BEAVERHEAD
BEAVERHEAD
Georgetown
Cable
Warmsprings
Merel
Stuart
ANACONDA
Modesty Cr.
Antelope Cr.
Lost Cr.
Deerlodge Riv.
Warm Spring Cr.
BUTTE ANACONDA
NORTHERN PACIFIC
MIL. & PUGET SOUND RY.
BALD MT.
MT. EVANS
GOAT PKS.
DIVIDE
French Gulch
French Gulch
CONTINENTAL
PERCE PK.
Rock Cr.
Fishtrap
Hole River
Wisdom or Big
SCALE IN MILES
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The Clason Map Co. Denver, Colo

raised large crops of grain and grasses and great quantities of vegetables.

A wonderful exhibit of grains and grasses from Deer Lodge county, arranged in the most attractive manner, is yearly shown at the Montana State Fair. The exhibit won the first prize in 1910, since which time it has not been entered in competition.

From the census bulletin, "Statistics of Agriculture—Montana," the following figures are taken:

PRINCIPAL CROPS IN 1910.

Crop.	Acres.	Production. (Bushels)	Crop.	Acres.	Production. (Tons)
Corn.....	....	.....	Hay and forage, total	17,644	21,441
Oats.....	722	26,548	Timothy alone	1,017	924
Wheat....	289	6,370	Timothy and clover mixed....	1,464	2,348
Barley....	35	389	Alfalfa	2,616	5,881
Rye.....	2	26	Other tame and cultivated grasses (exclusive of clover alone)	1,924	2,934
Flaxseed..	....	.....	Grains cut green	517	649
Dry Peas..	....	33	All other hay and forage.....	10,106	8,705
Potatoes..	593	88,924			

The County Commissioners, who have letters from many farmers giving accounts of crop yields, have issued a pamphlet in which they say:

"To the homeseeker with little capital and plenty of energy, Deer Lodge County offers unexcelled if not unequalled opportunities. Ten acres well handled will return a good living and will represent only a fractional part of the investment necessary to get land enough elsewhere, not so favored in regard to markets, on which to make the same good living. There's still a lot of good land to be had in the valley, and with intelligent tilling, it will yield more for the honest effort put forth than the same amount of land anywhere else in Montana. With but from forty to eighty acres of good land one who grows a variety of crops and raises hogs, chickens, a few cattle, etc., can handle his farm on a small investment and with profit. He can gradually increase the number of his cows until he has the number that he can most profitably keep. The number of fowl can also be easily increased or decreased to suit the conditions. Hogs of some good standard breed should be kept. He should be able to turn off a few head of horses each year. An orchard and small fruit should be started at an early date. The product of such a farm will bring high prices on the market. The demand for small fruit, butter and eggs, beef, pork, etc., that is fattened and marketed at the proper time will make fancy prices."

Hay and oats find a ready sale in Butte and Anaconda. In these two cities about $2,000,000 are annually paid out to miners and smeltermen and their demands for products of the dairy and the garden create the best of markets for Deer Lodge county products.

The population in 1910 was 12,988. The votes cast in 1908 numbered 3,143 and in 1912 the voters registered 3,477. Assessed valuations for the last three years were as follows: $8,707,003 in 1910; $8,813,472 in 1911; and $8,861,374 in 1912. At the last assessment real estate and improvements were valued at $5,647,603 and personal property at $2,292,145. Horses of various classes numbered 2,052, valued at $85,085; cattle of all kinds 2,854 head valued at $60,957; sheep 5,371, valued at $10,820, and hogs of the value of $2,863. The total acres of land assessed numbered 150,844 acres of an average value of $2.84. The Northern Pacific and Chicago, Milwaukee and Puget Sound railways run through Deer Lodge valley, and the Butte, Anaconda and Pacific railroad from Anaconda to Butte and from Anaconda

to the Georgetown district. The railway mileage is Butte, Anaconda and Pacific 72.99, Northern Pacific 27.52, and the Chicago, Milwaukee and Puget Sound 15.24; a total of 115.75 miles of railroad in the county. There are four telegraph companies having 70 miles of line and four telephone companies having 123 miles of wire.

Deer Lodge county is in the Helena land district and July 1, 1912, there were 38,200 acres of surveyed and 18,809 acres of unsurveyed, unappropriated public land.

The secretary of the Commercial Club at Anaconda will supply further information about opportunities in Deer Lodge county, on request.

FARMS AND FARM PROPERTY IN 1910, COMPILED FROM U. S. CENSUS REPORT.

Population	12,988
Population in 1900	17,393
Number of all farms	171
Number of all farms in 1900	564
Color and nativity of farmers:	
Native white	90
Foreign-born white	80
Negro and other nonwhite	1
Number of farms, classified by size:	
Under 3 acres	1
3 to 9 acres	....
10 to 19 acres	....
20 to 49 acres	3
50 to 99 acres	8
100 to 174 acres	64
175 to 259 acres	16
260 to 499 acres	46
500 to 999 acres	20
1,000 acres and over	13
LAND AND FARM AREA.	
Approximate land area—acres	479,360
Land in farms—acres	70,994
Land in farms in 1900—acres	359,518
Improved land in farms—acres	28,452
Improved land in farms in 1900—acres	92,489
Woodland in farms—acres	1,833
Other unimproved land in farms—acres	40,709
Per cent of land area in farms	14.8
Per cent of farm land improved	40.1
Average, acres per farm	415.2
Average improved acres per farm	166.4
VALUE OF FARM PROPERTY.	
All farm property	$2,084,978
All farm property in 1900	$4,694,317
Per cent of increase, 1900–1910	....
Land	$1,286,890
Land in 1900	$2,532,220
Buildings	$242,040
Buildings in 1900	$487,220
Implements and machinery	$61,652
Implements, etc., in 1900	$155,720
Domestic animals, poultry, and bees	$394,396
Domestic animals, etc., in 1900	$1,519,157
Per cent of value of all property in—	
Land	66.5
Buildings	11.6
Implements and machinery	3.0
Domestic animals, poultry, and bees	18.9
Average values:	
All property per farm	$12,193
Land and buildings per farm	$9,526
Land per acre	$19.54
Land per acre in 1900	$7.04
DOMESTIC ANIMALS. (Farms and ranges)	
Farms reporting domestic animals	162
Value of domestic animals	$387,525
Cattle:	
Total number	5,139
Dairy cows	1,284
Other cows	1,865
Yearling heifers	577
Calves	674
Yearling steers and bulls	255
Other steers and bulls	484
Value	$178,082
Horses:	
Total number	2,181
Mature horses	1,800
Yearling colts	289
Spring colts	92
Value	$184,277
Mules:	
Total number	26
Mature mules	15
Yearling colts	11
Spring colts	....
Value	$2,095
Asses and Burros:	
Number	2
Value	$30
Swine:	
Total number	1,285
Mature hogs	718
Spring pigs	567
Value	$15,329
Sheep:	
Total number	1,924
Rams, ewes, and wethers	1,626
Spring lambs	298
Value	$7,632
Goats:	
Number	20
Value	$80
POULTRY AND BEES.	
Number of poultry of all kinds	9,902
Value	$6,871
Number of colonies of bees	....
Value	....

FERGUS COUNTY.

Fergus county, which includes a large territory in the central part of the state, was created by act of March 12, 1885, and named for James Fergus, a noted pioneer.

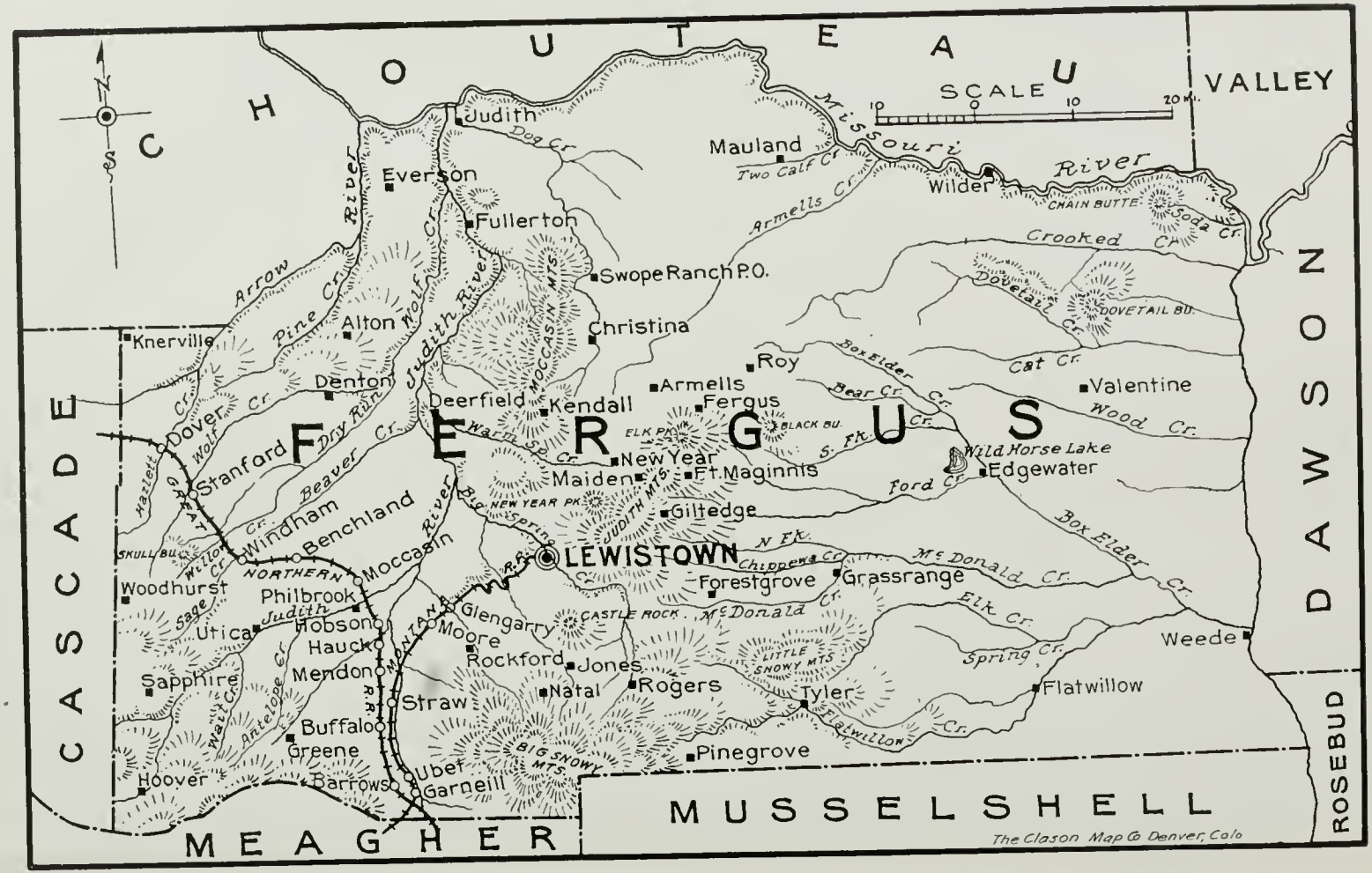
The greater part of the western part of Fergus county consists of the Judith Basin, which extends approximately sixty miles east and west and ninety miles north and south and comprises about 2,000,000 acres of table and gently rolling fertile farm lands, having an elevation varying from 3,500 to 4,500 feet. The Little Belt mountains bound it on the west and lesser ranges in other directions, making it a sheltered country. It is drained by the Judith river and tributary streams. The Missouri river forms the northern boundary and receives the Arrow river and smaller streams. The eastern part of the county is drained by the Musselshell river.

Stock growing, farming and mining are the industries. Before the advent of railroads stock growing, for which the conditions were ideal, was the main industry and it remains a very important one. Large producing gold mines are located at Kendall, Maiden and Gilt Edge and there are undeveloped mineral claims in other sections. The country is underlaid with coal and there are many large and numerous small coal mines.

A unique and important industry is the mining of sapphires in Yogo gulch about fifteen miles southwest of Utica. The best of the Yogo sapphires are of the first grade in color and quality and bring high prices. Twelve large boxes of Yogo sapphires in the rough were shipped in November last to London, England, to be cut and distributed throughout the world for sale as gems.

In the last five years agriculture, from being comparatively unimportant, has grown to be the leading industry. The development, which is still in its early stages, dates from the arrival of railroads in the basin. The vast territory of fertile farm lands, having the soil, the climate and the rainfall needed for the production of great crops, lay latent as a farming country for a generation, needing only tillers of the soil. These came when the railroads came and the transformation of the Judith Basin from a stock growing to a farming country that has taken place has probably been more rapid than has ever occurred in any other part of the United States. Township after township which a few years ago were open range lands are now among the most productive grain district of America. New railroad lines, under construction or soon to be built, will open to profitable grain growing perhaps as large an area as is now provided with convenient transportation facilities.

There is little waste land in the Judith Basin and the loam surface soil is generally underlaid with a gravel subsoil strongly impregnated with limestone. Limestone pebbles decompose when exposed to air and rain and keep the soil enriched. One-tenth of one per cent of nitrogen is said by an agricultural authority to be a satisfactory percentage—Judith Basin soil has 1.6 per cent of nitrogen for the first foot and 1.4 for the second.


CHOUTEAU
CASCADE
FERGUS
DAWSON
MUSSELSHELL
MEAGHER
ROSEBUD
VALLEY
SCALE
10 0 10 20 Mi.
Missouri River
Judith
Dog Cr.
Mauland
Two Calf Cr.
Wilder
Armells Cr.
CHAIN BUTTE
Soda Cr.
Crooked Cr.
Dovetail
DOVETAIL BU.
Everson
Fullerton
Arrow Cr.
Pine Cr.
Alton
Wolf Cr.
Judith River
Swope Ranch P.O.
Christina
Knerville
Denton
Dover Cr.
Dry Run
Roy
Box Elder Cr.
Cat Cr.
Armells
Valentine
Deerfield
Kendall
Fergus
Bear Cr.
Wood Cr.
ELK PK.
BLACK BU.
S. Fk.
Stanford
Warm Sp. Cr.
New Year
Maiden
Ft. Maginnis
Wild Horse Lake
Edgewater
Ford Cr.
Hazlett Cr.
Beaver Cr.
Windham
Benchland
NEW YEAR PK.
Gilt edge
Box Elder Cr.
SKULL BU.
Willow Cr.
NORTHERN
Moccasin
Big Spring Cr.
LEWISTOWN
N. Fk.
Chippewa Cr.
Mc Donald Cr.
Woodhurst
Philbrook
Forestgrove
Grassrange
Sage Cr.
Judith
Utica
Hobson
Glengarry
CASTLE ROCK
Mc Donald Cr.
Elk Cr.
Hauck
Moore
Weede
Rockford
Jones
LITTLE SNOWY MTS.
Spring Cr.
Sapphire
Mendon
Natal
Rogers
Tyler
Flatwillow
Straw
Nail Cr.
Antelope Cr.
Buffalo
Greene
Flatwillow Cr.
Pinegrove
BIG SNOWY MTS.
Hoover
Barrows
Lubet
Garneill
The Clason Map Co. Denver, Colo

The climate is good and the air dry and invigorating. The average annual precipitation at Lewistown is 19.29 inches, of which amount 10.72 inches fall during the growing season. Water is found in wells at a moderate depth.

From the Census Bulletin, "Statistics of Agriculture—Montana," the following figures are taken:

PRINCIPAL CROPS IN 1910.

Crop.	Acres.	Production. (Bushels)	Crop.	Acres.	Production. (Tons)
Corn.....	397	14,622	Hay and forage, total	63,328	97,164
Oats.....	33,536	1,467,000	Timothy alone	15,980	23,175
Wheat....	47,328	1,230,854	Timothy and clover mixed....	1,869	2,915
Barley....	1,854	62,918	Alfalfa	13,459	33,958
Rye.....	206	4,223	Other tame and cultivated grasses (exclusive of clover alone)	1,327	1,896
Flaxseed..	240	3,362			
Dry Peas..	....	278	Grains cut green	3,559	5,742
Potatoes..	896	165,329	All other hay and forage.....	27,134	29,478

Wheat, oats, barley, flax and hay are the chief crops. Winter wheat is the leading crop, though both spring and macaroni wheat are grown to a less extent. Thirty bushels is a medium crop of winter wheat and the weight of a bushel is sometimes as high as 66 pounds. It is of excellent milling quality and some crops grade No. 1 hard. Oats yield from 50 to 90 bushels to the acre, barley about 40 bushels, flax makes large yields, 150 to 600 bushels of potatoes are dug from an acre; blue joint, timothy and alfalfa produce hay in large quantites; vegetables yield well, and fruits thrive.

Although there are irrigated lands in the valleys, by far the greater part of the production comes from unirrigated lands. Upon a tract representative of many hundred thousand acres of bench lands the Judith Basin Experiment Station is located. The Department of Agriculture has recently issued a valuable bulletin upon cultivation methods and rotation of crops in the dry farming sections. There are reports from stations in North Dakota, South Dakota, Nebraska, Colorado, Kansas, Texas and Montana.

The different methods of cultivation and different systems of crop rotations cause variations of yield, but the striking fact that all the tables demonstrate is the superior productiveness of the Montana farm.

Of wheat at the Dickinson, North Dakota, station the yields in 1909 in bushels were 24.3, 17.7, and 35.7; at the Bellefourche, South Dakota, station, 23.8, 23.3 and 32.2; at the North Platte, Nebraska, station, 24.5, 26.0 and 31.8; at the Akron, Colorado station, 14.3, 10.3 and 18.5, and at the Garden City, Kansas, station, 2.1. At the Judith Basin, Montana, station, the yields were 33.0, 33.4 and 34.0 bushels.

Of oats, yields of 75.3, 66.2 and 78.7 bushels are reported from the Montana station against a maximum of 66.6 from all other stations, the average being 30.16, 30.5 and 44.11. Of barley the average yields of all stations were 21.11, 22.88 and 30.74. At the Judith Basin station, Montana, the average yields were 45.2, 43.3 and 49.4 bushels.

A well informed elevator man has estimated the wheat crop of Fergus county in 1912 at 4,500,000 bushels, and David Hilger, president of the First National bank at Lewistown, estimates the grain yield at 6,000,000 bushels. Oats, flax and barley may raise the total to 7,000,000 bushels.

A visitor stated to the Moore Nonpareil that he owned land in the east that was worth $200 an acre, and also owned land in the Judith Basin that cost less than $50 an acre, and that the Montana land produced more per acre than the eastern land. After an auto ride through the grain districts, I. I. Boak, head consul of the Woodmen of the World, said to a reporter of the Fergus County Argus:

"You can put in your paper as coming from me that I have been in Colorado, Utah, Idaho, California, Oregon and Washington, but my eyes have never rested upon a sight like this. It is simply marvelous."

While on the way to California to spend the winter, Nelson Ross, a Fergus county farmer, stopped at Butte and said to a reporter of the Anaconda Standard:

"I purchased a relinquishment on a homestead near Moore, nine years ago for one hundred and seventy-five dollars, and the deal involved not only the land, but a house and barn that had been erected by the original locator. I rave raised a crop every year during that time and my production of wheat has run from forty to sixty bushels an acre. Four years ago I had a yield of fifty-one bushels to the acre and refused ninty-three cents for the wheat, yet the same time I could not have sold that land at that time for twenty dollars an acre."

The opportunity for the land seeker in Fergus county is to purchase farm land at $30 an acre and up near railroad lines, cheaper land farther back, or to take up a homestead in the unsettled section. Land that may be relied upon to raise year after year thirty or more bushels of high grade wheat or other crops in like proportions before many years will have a fixed value perhaps amounting to double the price at which lands in the Judith Basin may now be bought.

Lewistown is the center of unexampled activity in railroad construction and will soon become one of the most important railroad centers in the northwest. The Great Northern railroad has recently completed the branch from Moccasin to Lewistown and trains run directly from Butte. Work on the New Rockford-Lewistown branch, which has been incorporated as the Montana Eastern Railway Company, has begun; a line will be built from Snowden on the main line to join the line from North Dakota at Fairview; and from Lewistown a section of the line is to be built at once to Grass Range, a distance of 32 miles. Lewistown will be a division point on the new line and extensive shops are to be located there. The Milwaukee railroad is constructing a line through the northern part of the county to Great Falls, a distance of 135 miles. From Hilger, the terminus of a branch line from Lewistown, two extensions of about 25 miles each are to be made, one eastward and one northward. From Lewistown a line will be built to Grass Range and thence to connect with the main line at Melstone in the Musselshell valley. Both companies have bought large tracts of land for terminal facilities and will build new stations. The Soo Railroad Company

has made reconnaissance surveys in the northern part of the county and it is expected to build a line through it.

Lewistown, the metropolis and county seat, when an inland town eighty miles from a railroad, was a very busy and prosperous place and has expanded its activities in all lines as the county has developed. The population returned by the census of 1910 was 2,992 and is said to be 5,000 in 1912. The city has an abundant supply of pure water, supplied by a municipal plant constructed at a cost of $150,000, boulevarded streets, cement sidewalks, a sewerage system, a fire department, and a public library. The business houses are chiefly of stone or brick; there are four elevators, a flour mill, a brick yard, five wholesale mercantile establishments and a number of retail ones. Four banks have deposits of $3,000,000; there are good schools, churches and a hospital; an electric light plant, two telephone systems, one daily and two weekly papers, large machine shops, hotels, theatres and many handsome residences. A great many costly business blocks and fine residences have been erected in the last two years. In 1912 a $35,000 church, a $75,000 public school building, a $20,000 high school gymnasium, a large and costly apartment house, business buildings costing over $100,000 and more than one hundred residences were built.

Moore, twenty miles south and west of Lewistown, in the center of a rich agricultural district, is the second town in importance, had a population in 1910 of 573, has two newspapers, two banks, a number of business houses, three churches, a high school, a $30,000 hotel, three grain elevators with a capacity of 275,000 bushels, and a cement brick block factory and a brick yard.

Straw, Garneill, Hobson, Benchland, Utica, Windham and Denton are towns in the farming section. Stanford has grown in three years from a small village to a thriving town. Kendall is the chief town in the gold mining districts. Hilger is the terminus of a branch line from Lewistown. Grass Range and Flatwillow are villages in the southern section into which many settlers have recently come.

The area is about 7,164 square miles. The population was 6,937 in 1900 and 17,385 in 1910, a gain of 10,488 or 150 per cent. The creation of Musselshell county in 1911 took from Fergus county property assessed at $3,408,216, caused a loss in territory of three townships and two sections that were put in Meagher county and of townships 6, 7, 8, 9, 10 and 11, ranges 19 to 31 inclusive, that were put in Musselshell county. A considerable population was also lost with the ceded territory. The votes cast in the county in 1908 numbered 2,952 and the votes registered in the county in 1912, after the loss of territory, numbered 5,270.

Assessed valuations were $16,887,276 in 1910 and $14,677,720 in 1911, the decline being due to the cession of territory. In 1912 the total assessed valuation of all property was $15,494,248. At the last assessment real estate and improvements were valued at $9,793,670 and personal property at $4,166,070. Horses of various classes numbered 16,731, valued at $740,080; cattle of all kinds 23,450 head, valued at $588,191; sheep 297,217.

valued at $600,929; and hogs of the value of $13,540. The acres of land assessed numbered 1,310,660, the average valuation being $5.13 per acre. Two telegraph companies had 102 miles of line, and one telephone company had 67 miles of wire. The Great Northern railroad had 71.80 miles of track and the Chicago, Milwaukee and Puget Sound railroad had 65.35 miles. July 1, 1912, there were in the Lewistown land district 758,227 acres of surveyed and 966,563 acres of unsurveyed, unappropriated public land, and 16,034 of surveyed land in the Great Falls land district.

The secretaries of Commercial Clubs at Lewistown, Moore, Hobson and Stanford will supply further infomation about oppotunities in Fergus county, on request.

FARMS AND FARM PROPERTY IN 1910, COMPILED FROM U. S. CENSUS REPORT.

Population	17,385
Population in 1900	6,937
Number of all farms	2,310
Number of all farms in 1900	732
Color and nativity of farmers:	
Native white	1,834
Foreign-born white	471
Negro and other nonwhite	5
Number of farms, classified by size:	
Under 3 acres	5
3 to 9 acres	1
10 to 19 acres	2
20 to 49 acres	15
50 to 99 acres	24
100 to 174 acres	1,059
175 to 259 acres	172
260 to 499 acres	553
500 to 999 acres	272
1,000 acres and over	207
LAND AND FARM AREA.	
Approximate land area—acres	5,809,920
Land in farms—acres	1,201,831
Land in farms in 1900—acres	704,860
Improved land in farms—acres	387,000
Improved land in farms in 1900—acres	121,389
Woodland in farms—acres	46,639
Other unimproved land in farms—acres	768,192
Per cent of land area in farms	20.7
Per cent of farm land improved	32.2
Average acres per farm	520.3
Average improved acres per farm	167.5
VALUE OF FARM PROPERTY.	
All farm property	$35,010,730
All farm property in 1900	$8,514,317
Per cent increase, 1900–1910	311.2
Land	$26,613,372
Land in 1900	$3,227,100
Buildings	$1,896,197
Buildings in 1900	$584,630
Implements and machinery	$1,072,695
Implements, etc., in 1900	$237,930
Domestic animals, poultry, and bees	$5,428,466
Domestic animals, etc., in 1900	$4,464,657
Per cent of value of all property in—	
Land	76.0
Buildings	5.4
Implements and machinery	3.1
Domestic animals, poultry, and bees	15.5
Average values:	
All property per farm	$15,156
Land and buildings per farm	$12,342
Land per acre	$22.14
Land per acre in 1900	$4.58
DOMESTIC ANIMALS. (Farms and ranges)	
Farms reporting domestic animals	1,881
Value of domestic animals	$5,375,915
Cattle:	
Total number	41,562
Dairy cows	4,503
Other cows	16,225
Yearling heifers	3,641
Calves	3,520
Yearling steers and bulls	3,380
Other steers and bulls	7,657
Value	$1,293,748
Horses:	
Total number	18,377
Mature horses	15,912
Yearling colts	1,912
Spring colts	553
Value	$1,955,845
Mules:	
Total number	263
Mature mules	246
Yearling colts	15
Spring colts	2
Value	$41,872
Asses and Burros:	
Number	12
Value	$3,145
Swine:	
Total number	6,622
Mature hogs	3,745
Spring pigs	2,877
Value	$67,376
Sheep:	
Total number	424,144
Rams, ewes, and wethers	382,325
Spring lambs	41,819
Value	$2,013,742
Goats:	
Number	23
Value	$187
POULTRY AND BEES.	
Number of poultry of all kinds	73,184
Value	$49,879
Number of colonies of bees	280
Value	$2,672

FLATHEAD COUNTY.

Flathead county is situated in the northwestern part of the tate, embraces the greater part of the Glacier National Park, the large and fertile Flathead valley, and beautiful Flathead lake. It was organized in 1893 and is named for the Indian tribe that formerly occupied the country. The eastern boundary is the main range of the Rocky mountains, of which the Flathead and Mission in the southern part are outlying ranges. Mountains on the west separate the drainage basin of the Flathead river from those of the Kootenai and Clark's Fork of the Columbia. The northern part is mountainous; in the southern part lies Flathead lake bounded by the low hills beyond which lies Mission valley. This is a region of many springs, streams, rivers and lakes whose waters flow into Flathead lake and out from it by the Flathead or Pend o'Reille river at Polson.

Flathead lake has an area of 360 square miles and is the central attraction. Around its wooded shores are some of the most beautiful spots on the continent. Orchards come close to the water, and attractive summer homes are found at many places. Flathead lake is not merely a wonder and a delight to the visitor, but is of great practical use. It is navigable, and numerous fast passenger boats make regular trips between lake ports during the summer season. Besides steamboats and gasoline launches, are tugs, barges and rafts which transport much freight.

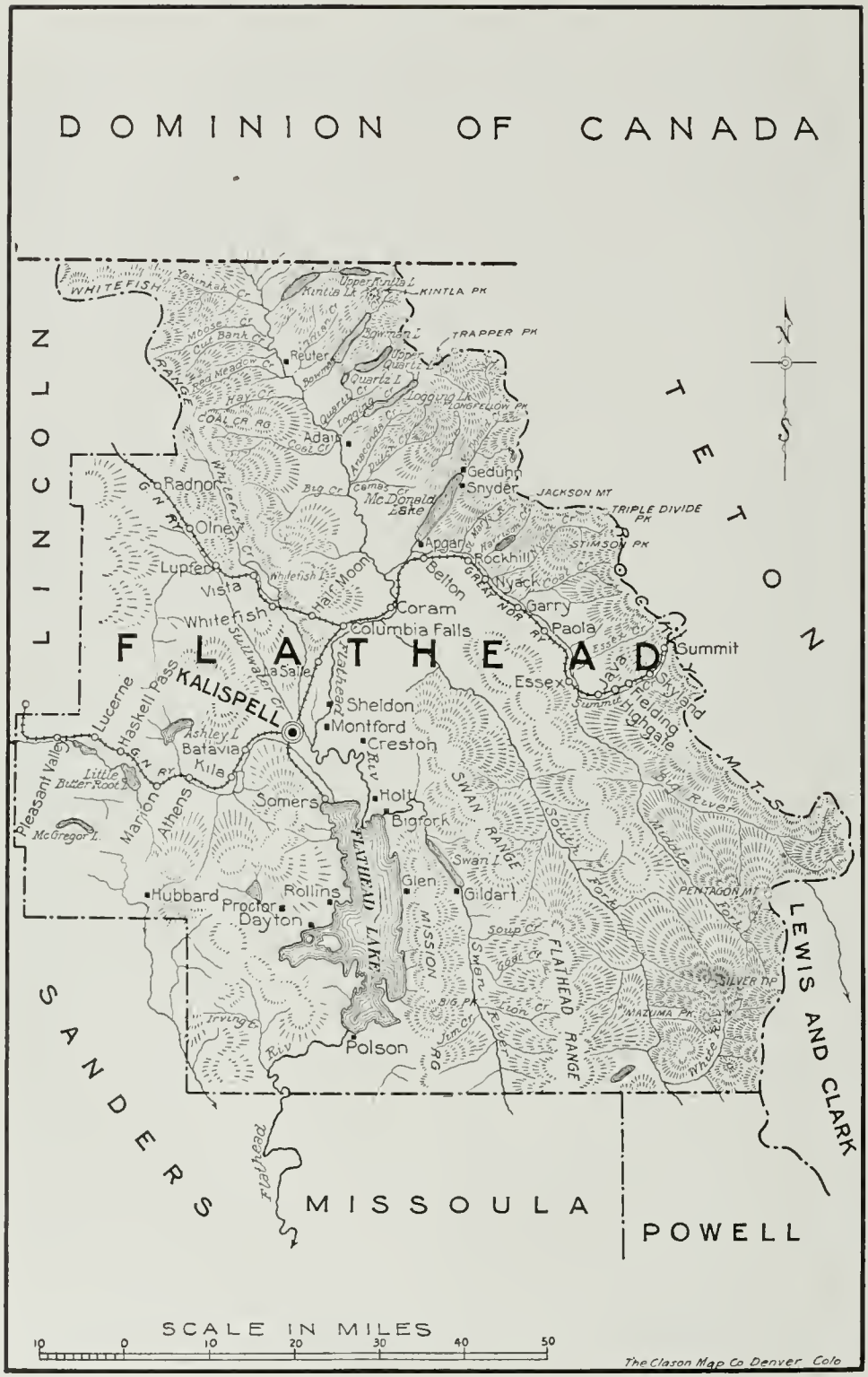
Lumbering is a great industry and there are numerous mills. Kalispell has large mills and at Somers, where also is a tie-preserving plant, is one of the largest mills in the country. In the northwestern Montana lumber district, of which Kalispell is the financial center, the standing timber has been estimated to amount to forty billion feet. In the lumber industry about 2,000 men are employed and receive for wages about $1,250,000 a year. The lumber sold brings $2,500,000.

The industries are farming, fruit growing and lumbering. Wheat yields from 35 to 50 bushels per acre, oats from 35 to 75 bushels, and barley, rye, hay, potatoes and other vegetables make large yields. The logging camps and lumber mills furnish home markets for farm produce.

On both shores of Flathead lake are fine farming and fruit growing districts, and south of the lake is the Flathead reservation that was opened in 1910. The climate is excellent and it is never very hot or very cold. Kalispell is 2,965 feet above sea level; the annual precipitation is 15.45 inches, and crops grow without irrigation.

Stock raising, farming, lumbering, was the order of the development, and some experiments were made at an early date in fruit growing. "The fondest dreams of the most sanguine have been realized," it is said; and today the Flathead country is one of the best fruit districts in the world. Flathead county fruit has won prizes at many expositions, including the cup offered in 1910 by the Lethbridge, Canada, Chamber of Commerce for McIntosh Red apples, and displays at the land shows of 1911 and 1912 enhanced the county's reputation for producing fruit of the best quality.

Many varieties of apples are successfully grown; a mature orchard will


DOMINION OF CANADA
LINCOLN
TETON
LEWIS AND CLARK
SANDERS
MISSOULA
POWELL
FLATHEAD
WHITEFISH
KINTLA PK
TRAPPER PK
JACKSON MT
TRIPLE DIVIDE PK
STIMSON PK
PENTAGON MT
SILVER TIP
MAZUMA PK
Upper Kintla L
Kintla Lk
Quartz L
Logging Lk
Longfellow Pk
Coal Cr Rd
Adair
Geduhn
Snyder
Radnor
Olney
Lupfer
Vista
Whitefish
Whitefish L
Half Moon
Apgar
Rockhill
Nyack
Belton
Coram
Columbia Falls
Garry
Paola
Summit
Essex
Skyland
Fielding
Highgate
La Salle
Sheldon
Montford
Creston
KALISPELL
Ashley L
Batavia
Kila
Lucerne
Haskell Pass
Pleasant Valley
Little Bitter Root L
McGregor L
Marion
Athens
Somers
Holt
Bigfork
Swan Range
Swan L
Glen
Gildart
Hubbard
Proctor
Dayton
Rollins
Flathead Lake
Mission Range
Soup Cr
Goat Cr
Swan River
Flathead Range
Polson
Jim Cr
Big Pk
Lion Cr
Irvine Cr
Flathead R
Middle Fork
South Fork
Swan R
Flathead R
SCALE IN MILES
10 0 10 20 30 40 50
The Clason Map Co. Denver Colo

yield 500 boxes per acre and a box will sell at from $1.25 to $1.75. Crab apples are raised in abundance and often pay better than the regular apple. Probably the most profitable crop raised is cherries, and especially the large sweet cherry. Leading varieties are the Bing and Royal Ann, which have been shipped to New York and sold for 40 cents a pound. They ripen when cherries from other regions are out of market, and because of superior size, color, quality and freedom from worms find a ready sale. On the Montana market they sometimes bring from 11 to 20 cents per pound. One hundred trees are set to the acre, a mature tree yields an average of 150 pounds, and an acre 15,000 pounds. Sold at an average price of 15 cents a pound the gross income for one acre is $2,250. Pears, plums, peaches, strawberries and raspberries are successfully grown. One grower sold strawberries from less than 1½ acres for $715. An acre of raspberries yielded $900. Fruits mature in any part of the valley, but the lake shore is a favored spot owing to the equalizing influence on the atmosphere of a large body of water and because the residents have become fruit specialists. Orchards are free from pests and a wormy apple is unknown. The grower will agree to give the buyer his entire crop if one worm is found therein.

An average of yields and prices for several years in the Flathead valley for well managed farms shows about as follows per acre: Wheat, 40 bushels at 80 cents, $32; oats, 70 bushels (2,800 pounds), at $1.10 per cwt., $30.80; rye, 35 bushels at 50 cents, $17.50; potatoees, 300 bushels (16,800 pounds), at $1 per cwt., $168.

The average yield per acre of a good orchard under intelligent management, and with proper facilities for marketing, without irrigation, and with mature trees, has been estimated to be as follows:

Apples, 500 boxes at $1.00	$500.00
Pears, 500 boxes at $1.25	625.00
Prunes, 720 crates at 75 cents	540.00
Plums, 720 boxes at 75 cents	540.00
Peaches, 600 boxes at 80 cents	480.00
Apricots, 600 boxes at 80 cents	480.00
Crabs, 720 boxes at 85 cents	612.00
Cherries, 19,200 quarts at 8 cents	1,625.00

This estimate on cherries takes into consideration an average of both sweet and sour varieties. The sweet cherries taken alone will show a higher revenue.

For the smaller fruits the figures are: Raspberriees, 5,625 quarts at 10 cents, $562.00; strawberries, 5,000 quarts at 8 cents, $400.00; currants, 3,750 quarts at 6 cents, $225.00; gooseberries, 3,125 quarts at 6 cents, $187.50.

The country is adapted not only to diversified farming and fruit growing but to dairying and truck farming, and its natural resources, when developed, will support a dense rural population.

From the Census Bulletin, "Statistics of Agriculture—Montana," the following figures are taken:

PRINCIPAL CROPS IN 1910.

Crop.	Acres.	Production. (Bushels)	Crop.	Acres.	Production. (Tons)
Corn.....	40	1,235	Hay and forage, total	26,053	34,861
Oats.....	17,909	795,721	Timothy alone	9,887	12,164
Wheat....	23,491	604,733	Timothy and clover mixed....	2,180	3,285
Barley....	1,717	56,404	Alfalfa	339	753
Rye.....	74	1,718	Other tame and cultivated grasses (exclusive of clover alone)	710	836
Flaxseed..	....	.....	Grains cut green	8,087	12,428
Dry Peas..	....	100	All other hay and forage.....	4,850	5,395
Potatoes..	1,613	216,004			

Farm production was never so great as this year, a result due in part to the bringing into cultivation of cut-over lands but chiefly to the yield of crops on the part of the county that includes a portion of the Flathead Indian reservation that was opened to settlement in 1910. This country is without railroad facilities, but nevertheless produces large quantities of grain, which is shipped chiefly from Polson across Flathead lake to the Great Northern railroad at Somers.

The country is rich in water power. At Big Fork is the plant that supplies Kalispell with electric light and power. Immense power is available in the Flathead river at Polson which is to be used for pumping water for irrigation and to furnish power for other purposes.

The Great Northern is the only railroad, the main line crossing the county. At Columbia Falls a branch line extends to Kalispell fifteen miles distant. From Kalispell one branch extends eleven miles to Somers, the principal port on the north shore, and another in a western direction to Marion, thirty-eight miles. A projected branch line through the Flathead reservation to connect Kalispell with the Northern Pacific at or near Dixon was surveyed some years ago. The Milwaukee railroad has surveyed a line down Swan river into the Flathead valley reaching Kalispell and extending north to the Canadian boundary.

Some work was done in 1911 on the Flathead Interurban Electric railway, which, according to its announcement, was to begin at Kalispell, extend northwesterly to Whitefish, pass through the rich farming districts of Stillwater and Spring creeks and thence southward near the eastern shore of Flathead lake to the town of Big Fork; but owing to lack of means or for some other reason this much needed railway has not been built.

Kalispell, Whitefish, Polson and Columbia Falls are the chief towns. Polson, the principal port on the south shore of Flathead lake, is the shipping point for a large and productive part of the Flathead reservation. It is a wonderful town, having grown from nothing to be an incorporated town with a population of 1,500 in three years. It has city improvements, good schools, churches, banks, large business houses, electric lights, telephones, a weekly newspaper and steamboat service to all points on the lake. A five story brick flouring mill having a daily capacity of 200 barrels of flour a day was erected in 1912 and adjoining it is an elevator of 30,000 bushels capacity. On the shore of the lake, near the docks, the Farmers'

elevator, having a capacity of 35,000 bushels of grain, has been constructed. A large warehouse has been built at the docks, and the grain storage capacity of Polson is about 100,000 bushels, whereas in 1911 there were no elevators.

Big Fork, in a fine fruit district, is the trading point for the Swan river country. On Whitefish lake, a beautiful body of water seven miles long at the head of Flathead valley, is Whitefish, which has grown in a few years to be a modern, progressive town of 2,000 people having city water, electric lights, telephones, sewers, brick business blocks, banks, business houses, a weekly newspaper, and a good fruit country adjoining. It is a railroad town, is a division point on the Great Northern, and has a monthly pay-roll of from $100,000 to $150,000 a month. Columbia Falls, at the head of the fertile eastside of the Flathead valley, has a bank, stores, a newspaper, lumber mills, the State Soldiers' Home, and is an important trading point for a rich agricultural district. Somers, the principal port on the north shore, is the terminus of the branch line of railroad from Kalispell and is the seat of a great saw mill and of a tie pickling plant. A state fish hatchery has been established at Somers. Dayton and Big Arm are towns on the west shore. Belton is the entrance to the Glacier National Park, a region of wonderful scenery to which thousands of visitors are yearly attracted.

Kalispell, the county seat and the business center of northwestern Montana, has 200,000 acres of rich argricultural land tributary to it, and ship large quantities of apples, cherries and small fruits. The population in 1910 was 5,549. A United States land office is located here, the county high school, a business college; the city has a water system, a sewer system, electric light and power, telephones, paid fire department, over ten miles of cement sidewalks and boulevarded and macadamized streets. The two principal streets have recently had modern pavements laid on them. There are five elevators, a cold storage plant, a large lumber mill, a flour mill, a nursery, many large mercantile establishments, four banks, four weekly newspapers and one daily, a public library, good schools, many churches, handsome dwelling houses, good hotels and many large business blocks. Factories to make furniture, excelsior, paper from wood pulp, boxes, cereals, and to utilize fruit hat cannot be shipped, are desired.

The area of Flathead county is about 6,226 square miles and the population in 1910 was 18,875. The number of voters registered in 1912 was 5,056. Assessed valuations for the last three years were as follows: $9,845,105 in 1910; $10,539,277 in 1911, and $10,758,253 in 1912. At the last assessment real estate and improvements were valued at $6,184,068 and personal property at $2,140,086. Horses of various classes numbered 5,804, valued at $257,400; cattle of all kinds 6,989 head, valued at $142,090; sheep 2,673, valued at $6,585, and hogs of the value of $7,855. The acres of land assessed numbered 773,731, the average valuation being $5.09 per acre. One telegraph company had 570 miles of line and one telephone company had 139 miles of wire. The only railroad is the Great Northern, which had

177 miles of track.

Flathead county is in the Kalispell land district and on July 1, 1912, there were 110,969 acres of surveyed unappropriated public land. There are few opportunities to get good land as homesteads, it is said.

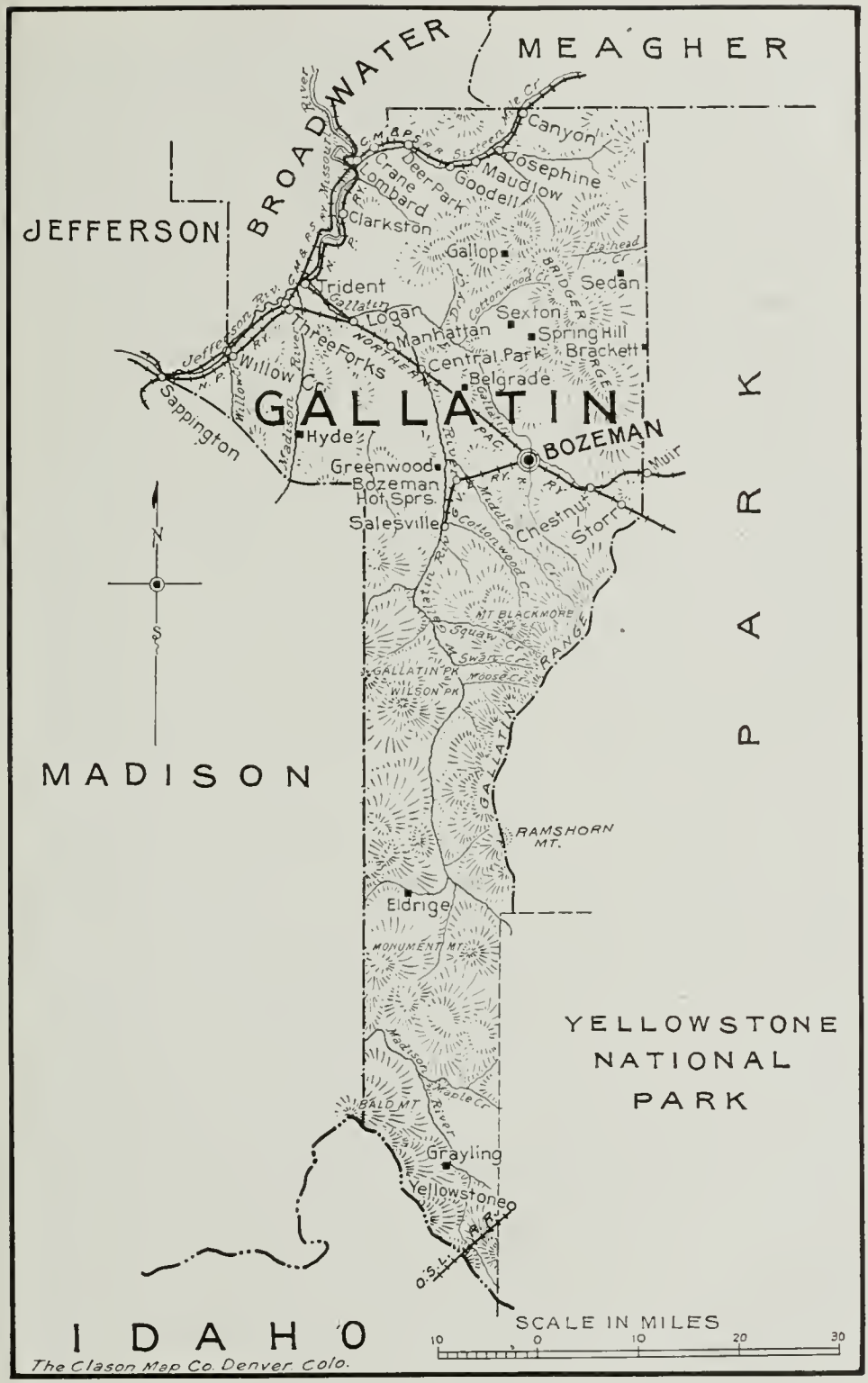
The secretaries of Commercial Clubs at Kalispell, Whitefish, Polson, Dayton and Big Arm will furnish further information upon opportunities in Flathead county, on request.

FARMS AND FARM PROPERTY IN 1910, COMPILED FROM U. S. CENSUS REPORT.

Population	18,785
Population in 1900	9,375
Number of all farms	1,189
Number of all farms in 1900	767
Color and nativity of farmers:	
Native white	772
Foreign-born white	394
Negro and other nonwhite	23
Number of farms, classified by size:	
Under 3 acres	5
3 to 9 acres	49
10 to 19 acres	30
20 to 49 acres	127
50 to 99 acres	148
100 to 174 acres	499
175 to 259 acres	110
260 to 499 acres	163
500 to 999 acres	40
1,000 acres and over	18
LAND AND FARM AREA.	
Approximate land area—acres	3,884,800
Land in farms—acres	239,445
Land in farms in 1900—acres	160,546
Improved land in farms—acres	105,679
Improved land in farms in 1900—acres	64,109
Woodland in farms—acres	76,490
Other unimproved land in farms—acres	57,276
Per cent of land area in farms	6.2
Per cent of farm land improved	44.1
Average acres per farm	201.4
Average improved acres per farm	88.9
VALUE OF FARM PROPERTY.	
All farm property	$12,844,617
All farm property in 1900	$2,833,684
Per cent increase, 1900–1910	....
Land	$9,519,600
Land in 1900	$1,768,410
Buildings	$1,460,245
Buildings in 1900	$408,270
Implements and machinery	$509,982
Implements, etc., in 1900	$157,050
Domestic animals, poultry, and bees	$1,354,790
Domestic animals, etc., in 1900	$499,954
Per cent of value of all property in—	
Land	74.1
Buildings	11.4
Implements and machinery	4.0
Domestic animals, poultry, and bees	10.5
Average values:	
All property per farm	$10,803
Land and buildings per farm	$9,235
Land per acre	$39.76
Land per acre in 1900	$11.10
DOMESTIC ANIMALS. (Farms and ranges)	
Farms reporting domestic animals	1,115
Value of domestic animals	$1,313,885
Cattle:	
Total number	14,946
Dairy cows	2,916
Other cows	4,683
Yearling heifers	1,864
Calves	2,197
Yearling steers and bulls	1,476
Other steers and bulls	1,810
Value	$434,886
Horses:	
Total number	6,465
Mature horses	5,367
Yearling colts	803
Spring colts	295
Value	$810,597
Mules:	
Total number	60
Mature mules	57
Yearling colts	3
Spring colts	....
Value	$8,880
Asses and Burros:	
Number	2
Value	$35
Swine:	
Total number	5,516
Mature hogs	2,733
Spring pigs	2,783
Value	$51,908
Sheep:	
Total number	1,975
Rams, ewes, and wethers	1,143
Spring lambs	832
Value	$5,537
Goats:	
Number	405
Value	$2,042
POULTRY AND BEES.	
Number of poultry of all kinds	60,526
Value	$39,466
Number of colonies of bees	113
Value	$959

GALLATIN COUNTY.

Gallatin county was one of the original counties created in 1865 by act of the legislature of the newly created territory of Montana. It was named for the Gallatin river, which was discovered by Lewis and Clark in 1805, and named after Albert Gallatin, who was secretary of the treasury in President Jefferson's administration. It has given freely of its territory to form other counties and is now a relatively small county having an area


BROADWATER
MEAGHER
JEFFERSON
GALLATIN
PARK
MADISON
YELLOWSTONE NATIONAL PARK
IDAHO
Canyon
Josephine
Maudlow
Goodell
Deer Park
Crane
Lombard
Clarkston
Gallop
Sedan
Trident
Logan
Sexton
Manhattan
Spring Hill
Brackett
Central Park
Belgrade
Three Forks
Willow Cr.
Sappington
Hyde
Greenwood
Bozeman Hot Sprs.
Salesville
BOZEMAN
Muir
Chestnut
Storm
Middle Cottonwood Cr.
MT BLACKMORE
Squaw Cr.
GALLATIN PK
WILSON PK
RAMSHORN MT.
Eldrige
MONUMENT MT.
BALD MT
Grayling
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of 2,513 square miles. The southern part of the county extends to the Yellowstone National Park and is a mountainous region pierced by the West Gallatin river into which flow numerous streams. The mountains are covered by forests, interspersed with parks, and there are several large basins of open country where the native grasses are abundant and afford a splendid summer range for livestock. Excellent coal has been found in this section and there are deposits of copper and asbestos. Considerable work has recently been done in developing placer gold deposits near where the West Fork empties into the West Gallatin river. This part of the country is a favorite resort for the camper, the fisherman, and the hunter, and is entered by a good road, which extends from the valley to the Yellowstone National Park, follows one of the most beautiful streams in America, passes through picturesque canyons, through forests and parks and basins and the bases of mighty mountain peaks.

The cultivated area is in the foothills which descend from the mountains surrounding the valley and in the Gallatin valley, an extensive region of wonderful fertility. The valley lands are irrigated from the waters of the West Gallatin river or tributary streams while on the benches and foothills farming is usually carried on without irrigation. The irrigated and unirrigated lands under cultivation are about of equal extent, but every year there is an increase in the number of acres of land farmed without irrigation due to the breaking and cultivation of tracts on the foothills that have been used heretofore for grazing. There is room and profitable employment in Gallatin county for five times the present number of farmers because many of the non-irrigated farms and nearly all of the irrigated farms are larger than the present owners can operate to their full efficiency; and while there is no chance to file on public land in the valley or the adjacent foothills there are splendid opportunities to buy land of remarkable fertility at low prices considering its productiveness.

The Gallatin valley has been called "The Egypt of America" and Gallatin county was the pioneer county to make farming the main industry of its inhabitants. The annual products of its farms are probably of greater value than those of any other county in the state.

About 300,000 acres are irrigated and produce from 50 to 75 bushels of barley, 80 to 140 bushels of oats, 35 to 80 bushels of wheat per acre. Hardy varieties of apples, plums and cherries do well; strawberries yield $700 to $1,200 an acre; radishes, lettuce, onions, peas, carrots, parsnips, beets, turnips, cabbage, beans, sweet corn, tomatoes, pumpkins, squashes, turnips, asparagus and celery are raised. Potatoes of the best quality are grown, the yield being from 300 to 500 bushels per acre. Red and alsike clover are extensively grown as well as timothy and alfalfa. Yields of 3 to 5 tons an acre are usual. These crops and field peas fit in with a system of crop rotation, following grain, and have in part a local market as feed for dairy stock and hogs. Dairying, poultry raising and raising hogs are profitable branches of farming.

The average production of grain per acre is believed to be unequalled

in any county in the United States. Reports collected from 192 irrigated grain fields embracing 14,000 acres gave an average crop of 58.2 bushels per acre and of $38.28 as the average returns per acre. The average yield of oats was 76.4 bushels, barley 58.7, wheat 44.2 and potatoes 291.5 bushels.

From 76 non-irrigated grain fields embracing 7,490 acres the average yield per acre was 42 bushels and the average value of the crop $35.39 per acre. Both irrigated and non-irrigated lands show a money return per acre that supports the claim that no county in the United States is known where farming is so profitable as in Gallatin county, Montana.

Statistics of the prolific crops of 1912 are not at present available, but returns of crops of 80 farms in 1911 were compiled and showed not only remarkable yields but disclosed the fact that the value of the crops exceeded in many instances the market price of the land on which it grew. The lowest value per acre of wheat was $27 and the highest $65.80; the low yield was 36 and the high 71 bushels of fall wheat; but as the grower of the first named crop had 17,000 bushels he is, no doubt, content. From 640 unirrigated acres near Salesville, E. H. Gooch harvested 41,600 bushels of Turkey Red wheat, an average of 65 bushels to the acre. The lowest value per acre for oats was $26.00 and the highest $61.50. Crops of potatoes that sold for $240 per acre, and of timothy seed $100 per acre, are reported.

On a plot at the Montana Experiment Station at Bozeman, Director Linfield raised 87.6 bushels per acre of Stanley spring wheat, and J. H. Durston is reported to have raised an average of 91 bushels per acre of Spring Club wheat on a four acre tract. F. L. Benepe, formerly president of the Montana State Fair, raised 176 bushels of oats to the acre on ground that grew potatoes the preceding year. The world's record yield of oats was made, it is believed, in 1909, when Rudolf Vogel, Jr., grew on his farm near Bozeman 488 bushels of Swedish select oats on two and one-half acres of ground. J. E. Moore had a barley yield of 85 bushels to the acre and W. W. Niven of Manhattan 1,015 bushels on 12 acres. L. A. Brittan received $1,700 from timothy seed harvested on 17 acres.

The quality of the grains have caused them to be in demand for seed and for shipment to flouring, cereal and malt mills. Barley has been shipped to Europe, Japan and Australia. Gallatin county grains won many first prizes at the Chicago, St. Louis and Portland Expositions and the costly Pabst cup some years ago at Salt Lake for the best barley in the United States. At the great New York Land Show held at Madison Square Garden, November, 1911, first prizes for wheat, oats, barley and alfalfa were awarded to Montana exhibitors and Gallatin county won two of them. The Pabst cup for the best barley grown in the United States was awarded to R. Eisinga and the Earling cup for the best oats grown in the United States was awarded to Hartman and Patton, T. Menard of the same county being second. Both prize winning crops were grown on land that a few years ago was considered of little value. At the St. Paul Land

Show of 1911 many first prizes were won by Gallatin county exhibitors, including the cup for "the best bushel of winter wheat grown in the American Northwest," which was awarded to Frank Smart.

A new industry that promises to be remarkably successful and profitable is the growing of seed peas under contract with seed houses. The soil and climate are ideal for the production of peas of the highest grade, and the pea crop should net the grower not less than $40 an acre. Nearly ten thousand acres were devoted to this crop in 1912; and while there were some failures due to late planting and unusually cold and wet weather it is believed the growing of seed peas is a demonstrated success.

Strawberries and raspberries make great yields and are in demand in the towns of the county and in Butte and other Montana cities. All hardy vegetables yield amazingly, the celery being of exceptional quality. Hardy apple trees make large yields of excellent fruit. Dairying is an important and increasing industry, and from the sale of eggs and chickens large sums are derived. Hogs thrive on alfalfa and cow peas and sell at profitable prices. There are many horses of excellent grade and beef and dairy cattle of the best types. No farming district in th northwest has greater advantages and no farming community is more prosperous.

From the Census Bulletin, "Statistics of Agriculture—Montana," the following figures are taken:

PRINCIPAL CROPS IN 1910.

Crop.	Acres.	Production. (Bushels)	Crop.	Acres.	Production. (Tons)
Corn.....	180	9,185	Hay and forage, total	46,769	86,992
Oats.....	37,676	1,735,672	Timothy alone	7,774	13,102
Wheat....	47,186	1,234,926	Timothy and clover mixed....	8,286	15,144
Barley....	4,884	160,622	Alfalfa	11,215	27,895
Rye.....	764	14,913	Other tame and cultivated grasses (exclusive of		
Flaxseed..	....	.....	clover alone)	1,679	2,401
Dry Peas..	..	1,060	Grains cut green	1,274	2,100
Potatoes..	879	155,061	All other hay and forage.....	16,541	26,350

The county is served by the Northern Pacific and Chicago, Milawukee and Puget Sound railways, and by the Gallatin Valley Electric railroad, a subsidiary of the latter. The main line of the Northern Pacific crosses the county from Bozeman tunnel to Logan and thence to Lombard; the Butte branch starts from Logan and passes west through the Jefferson valley; and from Manhattan a branch line has been built to Anceney in the Camp creek country; at Mountainside a railroad comes in from the Trail Creek coal fields. The Milwaukee's main line skirts the northwestern boundary from Three Forks to Sappington, and at the former place is joined with a branch line to Bozeman, which has a branch to Belgrade. Salesville is reached by the electric line; and from Bozeman a line has been built to Menard through the productive country between the Bridger range and the East Gallatin river. A line is being built north to Radersburg from Three Forks and it is expected that a southern extension through the Madison valley to Yellowstone will be constructed.

The chief towns are Bozeman, Three Forks, Belgrade and Manhattan.

Less than four years old, Three Forks with two railroads and a third building, a population in 1912 of 1,517, has large business houses, many civic improvements and a growing, busy little city is an example of how towns grow in developing Montana. It is the trading point for a large section, is a division point on the Milwaukee railroad, which has large shops there and pays out monthly a large sum to employes. Manhattan is a milling and shipping point for a productive section. Salesville in the southern and Maudlow in the northern part of the county are important grain shipping points. Belgrade is a thriving town in the center of the valley, has large flour mills and elevators, and ships great quantities of grain. Logan is a trading place for the lower Madison valley and is a junction point on the Northern Pacific railroad. At Trident is a large cement factory.

The county seat is Bozeman, "the beautiful," a city modern in every respect, with fine residences, surrounded by beautiful lawns and shade trees, churches, schools, business blocks, mills and elevators. The population in 1910 was 5,107. The city owns the water works, there are sewers, a paid fire department, paved streets, many miles of cement sidewalks, parks, street car lines, and the grounds of the Inter-State Fair Association. The Montana Agricultural College, the largest educational institution in the state, having nearly 500 students, the Montana Agricultural Experiment Station, the United States local land office and the United States Fish Hatchery are located at Bozeman. It is a beautiful residence and educational city and an important business place. There are flouring mills, a cereal food factory, several elevators, a brewery and numerous small factories. Every year in September Bozeman gives a "Sweet Pea Carnival," a unique festival that attracts thousands of visitors

The population of Gallatin county in 1910 was 14,079; the number of votes cast in 1908 was 3,216, and the number of voters registered in 1912 was 4,177. Assessed valuations for the last three years were as follows: $13,686,579 in 1910; $14,275,049 in 1911; and $14,765,857 in 1912. At the last assessment real estate and improvements were valued at $9,390,225 and personal property at $2,839,360. Horses of various classes numbered 11,179, valued at $550,865; cattle of all kinds 18,553 head, valued at $353,860; sheep 22,841 valued at $45,955; and hogs of the value of $17,415. The acres of land assessed numbered 718,861, the average valuation being $7.73 per acre. Three telegraph companies had 171 miles of line and three telephone companies 136 miles of wire. The total railroad mileage was 211; the Northern Pacific has 135 miles, the Chicago, Milwaukee and Puget Sound 27 miles; the Oregon Short line, which reaches the Yellowstone National Park at Yellowstone, 11 miles; and the Yellowstone Park, commonly known as the Trail Creek road, 7 miles.

Gallatin county is in the Bozeman land district, except a small part, and July 1, 1912, there were 32,706 acres of surveyed and 11,139 acres of unsurveyed, unappropriated public land in the Bozeman district, and 6,728 acres of surveyed unappropriated public land in the Helena land districts.

The secretaries of the Commercial Clubs at Bozeman, Belgrade and Three Forks will furnish further information about opportunities in Gallatin county, on request.

FARMS AND FARM PROPERTY IN 1910, COMPILED FROM U. S. CENSUS REPORT.

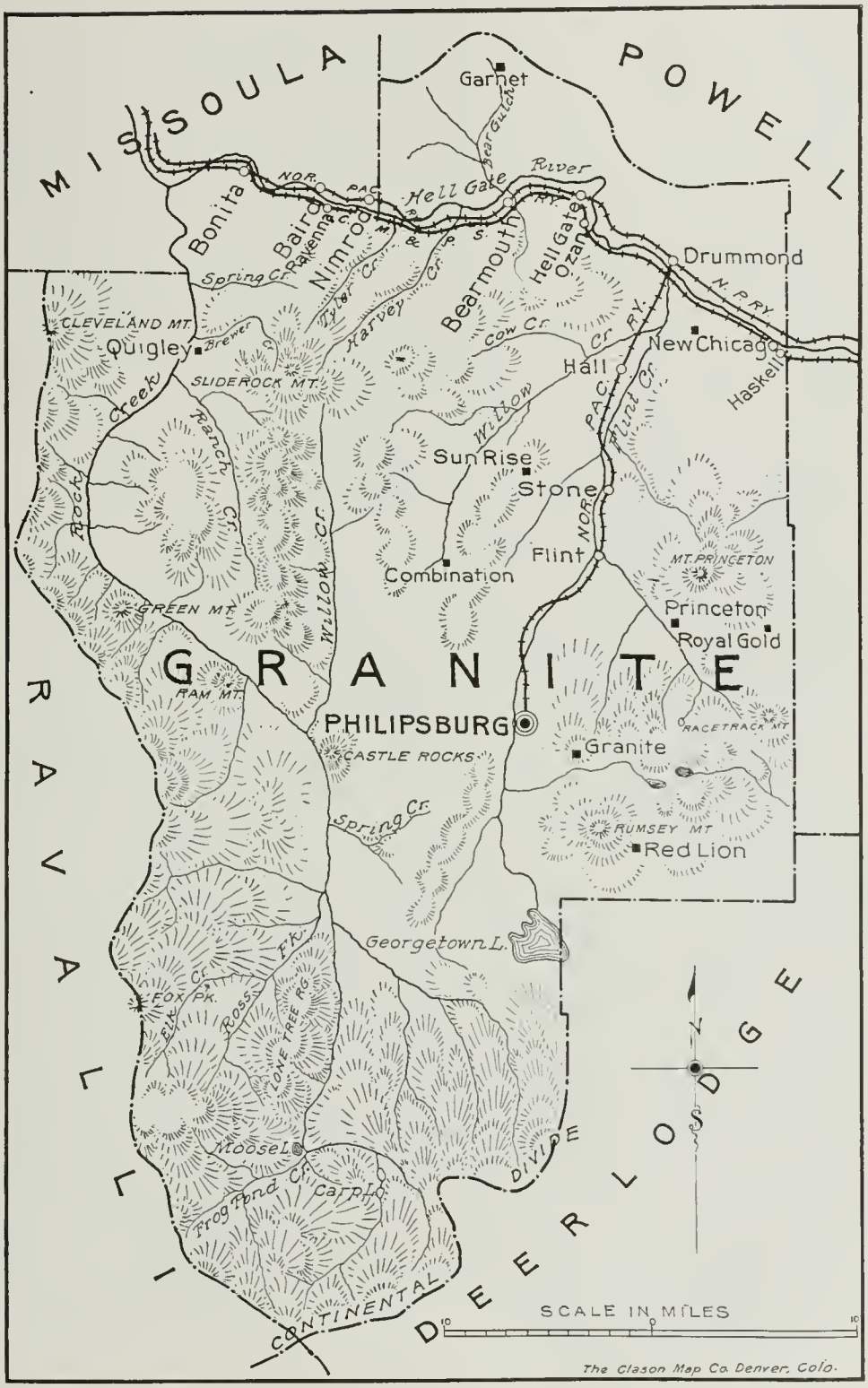
Population	14,079
Population in 1900	9,553
Number of all farms	1,260
Number of all farms in 1910	950
Color and nativity of farmers:	
Native white	1,007
Foreign-born white	252
Negro and other nonwhite	1
Number of farms, classified by size:	
Under 3 acres	8
3 to 9 acres	17
10 to 19 acres	12
20 to 49 acres	26
50 to 99 acres	48
100 to 174 acres	391
175 to 259 acres	131
260 to 499 acres	362
500 to 999 acres	178
1,000 acres and over	87
LAND AND FARM AREA.	
Approximate land area—acres	1,608,320
Land in farms—acres	531,902
Land in farms in 1900—acres	368,706
Improved land in farms—acres	279,908
Improved land in farms in 1900—acres	172,287
Woodland in farms—acres	29,368
Other unimproved land in farms—acres	222,626
Per cent of land area in farms	33.1
Per cent of farm land improved	52.6
Average acres per farm	422.1
Average improved acres per farm	222.1
VALUE OF FARM PROPERTY.	
All farm property	$21,715,003
All farm property in 1900	$6,667,290
Per cent increase, 1900–1910	225.7
Land	$16,429,074
Land in 1900	$4,609,400
Buildings	$1,890,310
Buildings in 1900	$707,310
Implements and machinery	$735,111
Implements, etc., in 1900	$295,590
Domestic animals, poultry, and bees	$2 660,508
Domestic animals, etc., in 1900	$1,054,990
Per cent of value of all property in—	
Land	75.7
Buildings	8.7
Implements and machinery	3.4
Domestic animals, poultry, and bees	12.3

Average values:	
All property per farm	$17,234
Land and buildings per farm	$14,539
Land per acre	$30.89
Land per acre in 1900	$12.50
DOMESTIC ANIMALS. (Farms and Ranges)	
Farms reporting domestic animals	1,200
Value of domestic animals	$2,613,513
Cattle:	
Total number	31,194
Dairy cows	5,316
Other cows	12,508
Yearling heifers	3,644
Calves	3,546
Yearling steers and bulls	3,190
Other steers and bulls	2,883
Value	$814,489
Horses:	
Total number	14,686
Mature horses	12,521
Yearling colts	1,671
Spring colts	469
Value	$1,485,441
Mules:	
Total number	348
Mature mules	274
Yearling colts	67
Spring colts	7
Value	$39,025
Asses and Burros:	
Number	15
Value	$8,225
Swine:	
Total number	8,428
Mature hogs	4,649
Spring pigs	3,779
Value	$69,019
Sheep:	
Total number	38,317
Rams, ewes, and wethers	25,453
Spring lambs	12,864
Value	$195,088
Goats:	
Number	616
Value	$2,226
POULTRY AND BEES.	
Number of poultry of all kinds	71,797
Value	$44,585
Number of colonies of bees	333
Value	$2,410

GRANITE COUNTY.

In 1893 Granite county was created from the western part of old Deer Deer Lodge county. It lies east of the Bitter Root valley and much of its territory is mountainous. The slope of the land is from the high mountains in the south to the Hellgate river in the north. In the mountain area is much beautiful scenery, excellent hunting and streams in which trout are abundant, and also much timber.

Granite county achieved a world wide reputation as a rich mineral district more than a score of years ago. Out of the great Granite-Bimetallic mine it is said that more than $40,000,000 in silver and gold have been taken, the production of other mines swelling the total to $50,000,000. While


MISSOULA
POWELL
RAVALLI
DEERLODGE
GRANITE
Garnet
Bear Gulch
Hell Gate River
Bonita
Baird
Nimrod
Bearmouth
Hell Gate
Ozana
Drummond
N. P. RY.
Spring Cr.
Tyler Cr.
Harvey Cr.
Cow Cr.
CLEVELAND MT.
Quigley
Brewer Cr.
SLIDEROCK MT.
Rock Creek
Ranch Cr.
Willow Cr.
New Chicago
Hall
Haskell
Flint Cr.
P. C. RY.
Sun Rise
Stone
Flint
NOR. PAC.
Combination
MT. PRINCETON
Princeton
Royal Gold
GREEN MT.
RAM MT.
PHILIPSBURG
RACETRACK MT.
Granite
CASTLE ROCKS
Spring Cr.
RUMSEY MT.
Red Lion
Georgetown L.
Ross Fk.
Elk Cr.
FOX PK.
LONE TREE RG.
Moose L.
Frog Pond Cr.
Carp L.
CONTINENTAL DIVIDE
SCALE IN MILES
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the famous mines of generations ago are not now producing in large quantities it is probable that there remains in them and in undeveloped prospects in the many mineral districts ores worth many millions of dollars. After a long period of idleness the company owning the famous Granite-Bimetallic mines have resumed their operation and at the close of 1912 the men employed by the management and the leasers numbered about 175. Prospectors continue to search for new deposits, leasers are working in old mines, and many small mines are operated by individual owners or by companies. The outlook is for an improvement in the mining industry in all districts and for swift development into a great producing camp of the Georgetown lake country into which has been extended the Butte, Anaconda and Pacific railroad. There was much activity in this district in 1912 and large capitalists are reported to have become interested in some of the properties.

In the West Fork district of Granite county great quantities of sapphires have been mined. The stones which are found in gravel deposits from which they are taken by hydraulic mining are of value as gems when of the first quality and as abrasives when of inferior grade.

Much attention has been paid to the breeding of improved strains of horses and cattle. Belgian, Percheron, Shire, and standard bred stallions have sired young horses that have sold for high figures. At least a half of the range cattle is Hereford stock; George R. Cartier has had a herd of Aberdeen or Polled Angus cattle of the best breeding; and blooded Jerseys and Holsteins are found on many dairy farms.

The county has convenient markets for its products in Missoula, Anaconda and Butte. The Flint creek valley has peculiar advantages for successful dairying and creameries at Philipsburg and Hall produce large quantities of excellent butter and other dairy products which have won many prizes at the Montana State Fair and at other expositions.

The valleys of Flint and Rock creeks and Hellgate river contain many acres of irrigated lands that yield profuse crops of grain and grasses. Flint creek valley extending from Drummond to Philipsburg embraces the most productive agricultural section. The soil is alluvial, rich and deep, and convenient railroads transport grain, grasses and vegetables to the markets close at hand. Oats make large yields and crops of 75 to 100 bushels per acre are not uncommon. In Rock creek valley are many fine ranches. The average production of grain is high, but hay is the chief crop. Mr. Werning averaged four tons to the acre of timothy and clover at a single cutting and sold the hay at Philipsburg, baled, at $15 a ton. Hellgate valley has an easterly and westerly trend and a width in places of more than a mile of rich alluvial soil. The Northern Pacific and the Chicago, Milwaukee and Puget Sound railways run through it; and its productive lands offer advantages that are equalled at few places.

From the census bulletin, "Statistics of Agriculture—Montana," the following figures are taken:

PRINCIPAL CROPS IN 1910.

Crop.	Acres.	Production. (Bushels)	Crop.	Acres.	Production. (Tons)
Corn.....	....	.....	Hay and forage, total	21,888	34,710
Oats.....	2,698	131,964	Timothy alone	2,324	4,216
Wheat....	1,590	48,937	Timothy and clover mixed....	6,496	10,901
Barley....	303	8,453	Alfalfa	724	1,929
Rye.....	171	3,585	Other tame and cultivated grasses (exclusive of clover alone)	890	1,495
Flaxseed..	....	.....	Grains cut green	829	1,588
Dry Peas..	....	.....	All other hay and forage.....	10,625	14,581
Potatoes..	147	37,370			

Farming without irrigation—dry land farming—has been successful and many new acres have recently been brough under cultivation. Arthur P. Smith of Hall, who has made a success of dry farming, says:

"My experience the past five years leads me to conclude that we are just as sure of our crops if we follow scientific methods as we are by irrigation. I have been called all kinds of a fool since I started out at dry farming, and yet the first year I had as high as 35 bushels of wheat to the acre, and the doubting Thomases then said it was because it was a favorable year. I kept on raising crops, and others took up the method until wheat is now raised hereabouts by thousands of acres. I am as yet the only farmer in the valley to use the subsurface packer, and the only one to apply dry farming methods to vegetables. Until a year ago I was the only one to harrow grain, and the Thomases stood back and said: 'Look at the fool harrowing up his grain.' But now, one after the other is taking it up, and many who said grain could not be raised here are jumping into the ring and getting busy. One thing is certain, that if we can get crops such a year as 1910 has proven, we can get them any year, and we need fear for nothing in another bad year. Many have said, 'Just wait till you get a year like 1889, and then you will see that dry farming is a failure,' and they have waited, and the year has come and gone, and they have seen and appreciated that it is not a failure, but instead is the biggest success known. Yes sir, the croakers in Montana are speechless. I have not only demonstrated what can be done for the benefit of my neighbors, but I have sent a lot of my samples of grains and vegetables to the International Dry Farm Products Exposition, which was held in connection with the fifth Dry Farming Congress at Spokane, and I captured some of the best awards with them. Dry Farming tells."

The advantages of the county for fruit growing are attracting attention. The suitability of the soil and climate for the successful production of fruits on a commercial scale is shown by several orchards, among them the McGowan orchard of 990 trees at Hall and the orchard of George W. Morse at Drummond.

Philipsburg, the county seat and principal town, is a terminus of a branch line of the Northern Pacific railroad, had a population of 1,109 in 1910, occupies a commanding position upon the upper terrace of Flint creek valley, has excellent drainage, a good water system, an electric lighting plant, a court house, handsome homes, good hotels, business houses, a bank, a creamery, a foundry, a brewery, and a weekly newspaper. The public schools of Philipsburg and the Granite County High School afford excellent opportunities for obtaining a good education. Hall, in the Flint creek valley, is in the center of a prolific farming section, has an up-to-date creamery, and is known as the "Spotless Town." "Within its confines," says a writer, "no saloon can abide; money cannot buy a

saloon site." Hall has a number of business establishments, is within easy reach of lignite coal mines, and controls the trade of a populous farming district. Drummond, on the main line of the Northern Pacific railroad where the Philipsburg branch starts, is the trading place for the northern end of the county, has mercantile houses, a newspaper, and men who will be glad to tell of the advantages the neighboring country has to offer to the homeseeker.

Granite county has an area of 1,637 square miles. The population in 1910 was 2,942; the number of votes cast in 1908 was 910 and the number of voters registered in 1912 was 1,107. Assessed valuations for the last three years were as follows: $3,174,597 in 1910; $3,269,533 in 1911; and $3,284,247 in 1912. At the last assessment real estate and improvements were valued at $1,285,399 and personal property at $762,855. Horses of various classes numbered 3,514, valued at $139,555; cattle of all kinds 10,816 head, valued at $212,701; sheep 16,840 head, valued at $34,121, and hogs of the value of $1,855. The acres of land assessed numbered 235,767, the average valuation being $2.72 per acre. Three telegraph companies had 116 miles of line and five telephone companies 134 miles of wire. The total railroad mileage was 102, as follows: Northern Pacific 67 miles, and the Chicago, Milwaukee and Puget Sound 35 miles.

A part of Granite county is in the Missoula land district and a part in the Helena land district. July 1, 1912, there were 26,508 acres of surveyed and 13,365 acres of unsurveyed, unappropriated public land in the Missoula land district, and 75,500 acres of surveyed and 61,709 acres of unsurveyed, unappropriated public land in the Helena land district.

The secretaries of the Commercial Clubs at Philipsburg and Drummond will furnish further information about opportunities in Granite county, on request.

FARMS AND FARM PROPERTY IN 1910, COMPILED FROM U. S. CENSUS REPORT.

Population	2,942
Population in 1900	4,328
Number of all farms	295
Number of all farms in 1900	205
Color and nativity of farmers:	
Native white	197
Foreign-born white	97
Negro and other nonwhite	1
Number of farms, classified by size:	
Under 3 acres	....
3 to 9 acres	2
10 to 19 acres	....
20 to 49 acres	5
50 to 99 acres	6
100 to 174 acres	138
175 to 259 acres	13
260 to 499 acres	56
500 to 999 acres	43
1,000 acres and over	32
LAND AND FARM AREA.	
Approximate land area—acres	1,047,680
Land in farms—acre	134,807
Land in farms in 1900—acres	65,764
Improved land in farms—acres	43,669
Improved land in farms in 1900—acres	26,272
Woodland in farms—acres	7,815
Other unimproved land in farms—acres	83,323
Average values:	
All property per farm	$12,612
Land and buildings per farm	$9,056
Land per acre	$17.86
Land per acre in 1900	$9.40
DOMESTIC ANIMALS. (Farms and Ranges)	
Farms reporting domestic animals	264
Value of domestic animals	$932,648
Cattle:	
Total number	10,627
Dairy cows	1,337
Other cows	3,157
Yearling heifers	1,861
Calves	2,359
Yearling steers and bulls	1,816
Other steers and bulls	4,097
Value	$512,886
Horses:	
Total number	3,911
Mature horses	3,237
Yearling colts	573
Spring colts	101
Value	$299,250
Mules:	
Total number	235
Mature mules	142
Yearling colts	76
Spring colts	17
Value	$16,190

Per cent of land area in farms..	12.9
Per cent of farm land improved..	32.4
Average acres per farm	457.0
Average improved acres per farm	148.0

VALUE OF FARM PROPERTY.

All farm property	$3,720,425
All farm property in 1900	$1,272,959
Per cent increase, 1900–1910....	192.3
Land	$2,408,165
Land in 1900	$617,980
Buildings	$263,370
Buildings in 1900	$167,540
Implements and machinery	$109,352
Implements, etc., in 1900	$57,010
Domestic animals, poultry, and bees	$939,538
Domestic animals, etc., in 1900..	$430,429

Per cent of value of all property in—

Land	64.7
Buildings	7.1
Implements and machinery	2.9
Domestic animals, poultry, and bees	25.3

Asses and Burros:	
Number	2
Value	$30
Swine:	
Total number	897
Mature hogs	391
Spring pigs	506
Value	$8,292
Sheep:	
Total number	16,637
Rams, ewes and wethers	14,793
Spring lambs	1,880
Value	$94,978
Goats:	
Number	339
Value	$1,022

POULTRY AND BEES.

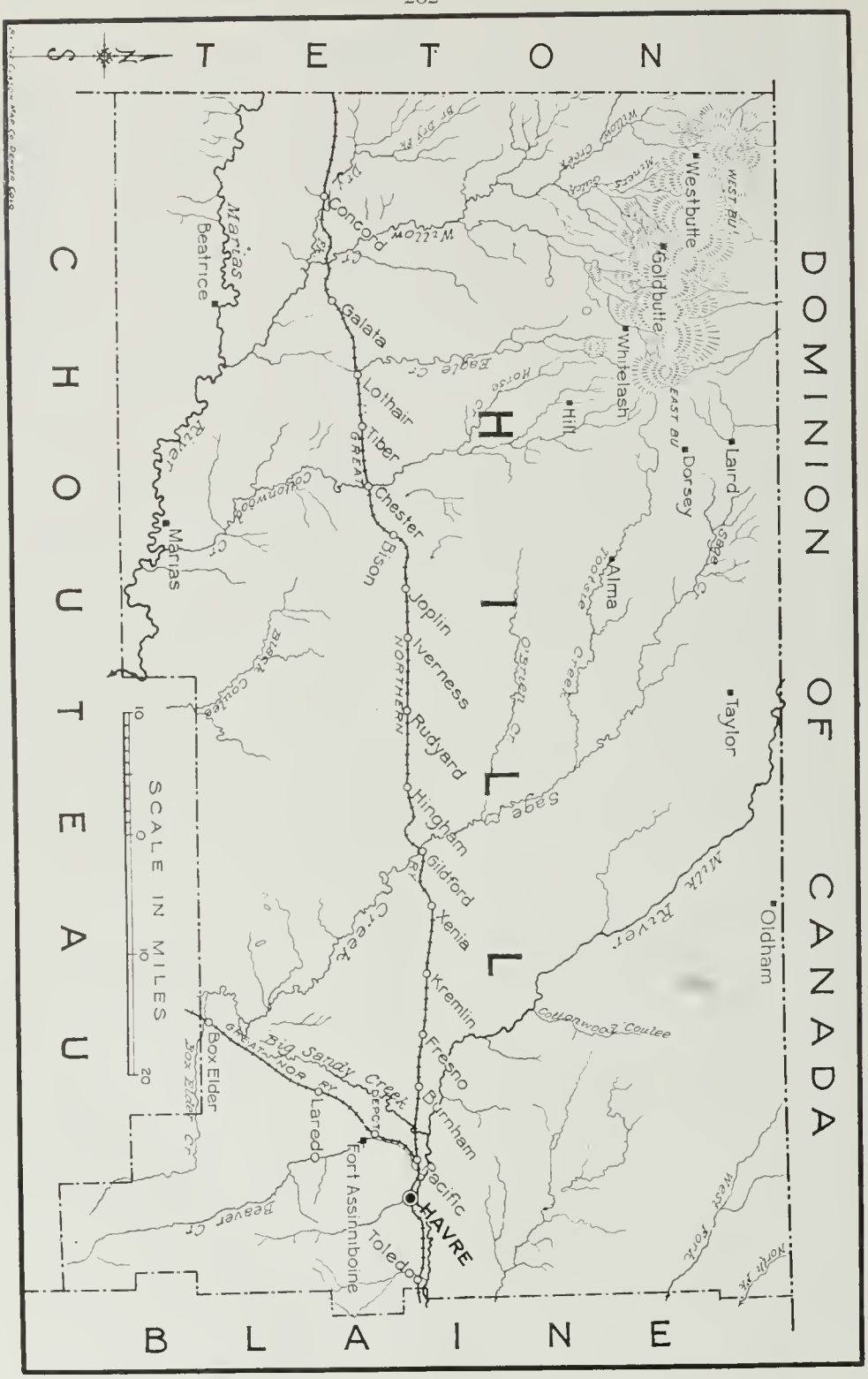
Number of poultry of all kinds	11,860
Value	$6,890
Number of colonies of bees..	....
Value	....

HILL COUNTY.

An act to provide for the creation, organization and classification of new counties was approved March 6, 1911 (Laws of Montana, Twelfth Session, Chapter 112, page 205), under whose provisions were created the counties of Hill and Blaine from parts of Chouteau county. The necessary proceedings having been taken an election was held February 20, 1912, of the registered voters inhabiting the territory embraced within the proposed new county of Hill to determine whether said county should be created and to fix the location of the temporary county seat, which resulted as follows: In favor of creation of Hill county 1,800 votes, against 490 votes; for Havre as county seat 1,546 votes, for Chester 591 votes. The votes were canvassed by the board of county commissioners of Chouteau county, which, in compliance with the provisions of the act, and by a resolution duly entered upon its minutes declared such territory duly formed and created as a county under the name of Hill county. A duly certified copy of said resolution was filed in the office of the Secretary of State, February 28, 1912, whereupon the county was fully created.

The boundaries of Hill county are as follows:

Commencing at the section corner between sections 3 and 4, township 37 north, range 17 east, M. M. which is on the International Boundary line between the United States and Canada; thence south on lines of public surveys about six miles to the standard corner of sections 33 and 34, township 37 north, range 17 east, M. M.; thence west along the ninth standard parallel north to the closing corner of sections 3 and 4, township 36 north of range 17 east M. M.; thence south about twenty-four miles on the lines of public surveys to the standard corners of sections 33 and 34, township 33 north, range 17 east M. M.; thence east on the eighth standard parallel north to the closing corner of sections 2 and 3, township 32 north, range 17 east M. M.; thence east on the eighth standard parallel north to the closing corner of sections 2 and 3, township 32 north, range 17 east M. M.; thence south about three miles on lines of public surveys to the southwest corner of section 14, township 32 north, range 17 east M. M.; thence east about one and one-half miles to the quarter section corner between sections 13 and 24; thence south on the lines of public surveys about five miles to the quarter section corner between sections 12 and 13, township 31 north, range 17 east M. M.; thence west about one and one-half miles to the northwest corner of section 14, township 31 north, range 17 east M. M.; thence south


TETON
DOMINION OF CANADA
CHOUTEAU
HILL
BLAINE
Westbutte
Goldbutte
Whitelash
Hill
Dorsey
Laird
Taylor
Oldham
Alma
Beatrice
Marias
Concord
Galata
Loihair
Tiber
Chester
Bison
Joplin
Inverness
Rudyard
Kingham
Gildford
Xenia
Kremlin
Fresno
Birnham
Pacific
HAVRE
Toledo
Fort Assiniboine
Laredo
Box Elder
Big Sandy Creek
Sage Creek
Teoslate Creek
Colorado Creek
Black Coulee
Coalwood Coulee
Milk River
Marias River
Beaver Cr.
Eagle Cr.
Horse Cr.
Willow Creek
Meadow Creek
West Butte
East Butte
Great Northern Ry.
Pacific Ry.
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about four miles to the southeast corner of section 34, township 31 north, range 17 east M. M.; thence west about seven miles to the southwest corner of section 3, township 29 north, range 17 east M. M.; thence west about one and one-half miles to the quarter section corner on the north boundary of section 8, township 29 north, range 17 east M. M.; thence south on lines of public survey about five miles to the quarter section corner on the south boundary of section 32, township 29 north, range 17 east M. M.; thence east about one mile to the northwest corner of section 3, township 28 north, range 17 east M. M.; thence south on lines of public surveys to the standard corner of sections 33 and 34, township 28 north, range 17 east M. M.; thence running west along the township line between townships 27 and 28 for about nine miles to the point where said township line intersects the range line between ranges 15 and 16 east M. M.; thence running north along said range line between ranges 15 and 16 when surveyed about six miles to the point where the said range line between ranges 15 and 16 when surveyed will intersect the township line between townships 28 and 29 north when surveyed; thence running west about six miles along said township line between townships 28 and 29 when surveyed to the point where the said township line intersects the range line between ranges 14 and 15 east M. M.; thence running north about six miles along said line between ranges 14 and 15 to the point where the said range line intersects with the township line between townships 29 and 30, north; thence running west about 36 miles along the said line between townships 29 and 30 to the intersection of said township line with the line running between ranges 8 and 9 east M. M.; thence running south about six miles along said line between ranges 8 and 9 to the point where the said line intersects the township line running between townships 28 and 29, north; thence running west about forty-eight miles along the said line between townships 28 and 29 to the western boundary of Chouteau county, the range line lying between ranges 1 east and 1 west, Montana Meridian; thence running north about fifty-four miles along the said west boundary line of Chouteau County to the point where the said western boundary line joins the Canadian boundary line; thence running east about ninety-nine miles along the said Canadian boundary line to the point of beginning.

The census reports on population, farm statistics, irrigation and other subjects relating to the part of Montana that is now in Hill county are included in the Chouteau county returns and cannot be given separately except in a few instances. In many cases the population in 1910 for the minor civil subdivisions of Chouteau county is returned for the census district by its number; the location is not indicated; but the following districts together with others having nearly as many inhabitants that cannot be identified are in the present Hill county, viz: District 16, including Havre town, 3,624; Gold Butte, 280; Whitefish, 232; Chester, 750; Alma, 148; and Fort Assinniboine military reservation, 365. Thirty-nine precincts were taken from Chouteau county and the total vote cast at the special election was 2,290. In 1912 the registered voters in Hill county numbered 3,610, an indication that the population at present is probably more than 10,000.

Near Havre is the very large Fort Assinniboine military reservation which has been abandoned as a military post. The status of lands in this reservation is explained in the following letter from the Assistant Commissioner of the General Land Office:

Department of the Interior,
General Land Office,
Washington, November 22, 1912.

Sir: I have to acknowledge receipt of your letter dated November 13, 1912, and in reply I have to advise you that the Fort Assinniboine Military Reservation was turned over to this department for disposal in accordance with the Act of July 5, 1884 (23 Stat., 103), or as may be otherwise provided by law. The reservation contains approximately 168,000 acres only a portion of which has been surveyed. There is pending before Congress a bill which provides for the disposal of the lands therein, but pending the disposition of said legislation, this office cannot advise you as to the manner of disposal of said lands, or as to when they will be opened.

Very respectfully,
(Signed) S. V. PROUDFIT,
Assistant Commissioner.

Mr. J. H. Hall,
Commissioner, Bureau of Agriculture, Labor, Industry and Publicity, Helena, Montana.

Hill county includes all of the northwestern part of old Chouteau county, is 54 miles on the west line and 99 miles on the north, the east line, slightly irregular, is 54 miles long. The south line is deflected to leave in Chouteau county six of the lower townships but is otherwise regular The area of Hill county is estimated at 5,058 square miles or 3,237,120 acres. The Sweet Grass hills are in the northwestern corner and a part of the Bear Paw mountains in the southeastern corner, but the general character of the vast acreage is level or slightly rolling land, clear of brush and rock and ready for the plow. The rivers are Marias in the southwestern part and the Milk that comes in from Canada somewhat east of the center of the county and flows southeast to Havre.

There is some timber in the mountains but few trees away from them. Coal is relied upon as fuel and is mined at Havre and other places. In the Sweet Grass hills gold has been found. Near Havre is an extensive deposit of rock of the kind of which the best cement is made.

The temperature and precipitation vary somewhat at different points in the extensive territory embraced in Hill county. The average annual temperature at Havre for the last eleven years has been a little less than 43. Chinook winds are more common than in some other parts of the state and modify the cold of winter. According to a table published in the Havre Promoter a comparison of temperatures shows that Havre is warmer during the winter than any place on the line of the Great Northern railroad in Minnesota or North Dakota, the mean tempereature of the places named for the months of November, December, January, February and March being: Pembina, 8.9; Crookston, 13.1; Moorhead, 13.7; Duluth, 18.8; St. Paul, 21.1; and Havre, 21.5. The average precipitation of northern central Montana is about 17 1-3 inches; in some localities near the mountains it is above 20. "Throughout the year," says the government weather report, "the distribution is especially favorable for agriculture since more than one-half of the annual amount falls during the four principal growing months, April to July inclusive."

Stock growing was formerly the leading industry and is still very

important. Farming is of irrigated lands in the valleys which are small in extent compared with the vast extent of prairie and bench lands which are now farmed without irrigation or are capable of being so farmed. The quality and variety of products displayed at the Hill county fair, the Montana State Fair and the Minneapolis Land Show in 1912 bore abundant proof of the productiveness of the soil of Hill county.

Hill county claims to have shown the best wheat at the Minneapolis Land Show in 1912. The Havre Plaindealer says an exhibit of five bushels made by Fred Smrz of Hingham was highest in the commercial test with a score of 98.5 and highest in the milling test with a score of 105.6. Other Montana wheat exhibits, however, had higher scores in both respects, surpassed it in the score for yields and in the total score.

A sample of the prairie soil in the vicinity of Gildford, typical of the soil common in this part of the state, was sent to Prof. Alfred Atkinson, agronomist at the Montana Agricultural Experiment Station, who reported on it as follows:

Dear Sir:

On account of being absent from my office I just yesterday received the sample of soil which you sent for analysis. After examining it I find that it would be classed as a silt loam with plenty of organic matter. From the point of view of dry farming, this soil would be considered as very valuable. It contains sufficient lime to make for the continued production of very high grade wheat, and the particles being fine, this soil would have a high moisture-holding capacity if properly farmed. If the section around Gildford is similar to the soil sample which you have sent, it ought to develop into a very fine farming region. Of course you will remember that the amount and distribution of the rainfall is a very important factor in the development of any dry farming locality.

Sincerely yours,

(Signed) ALFRED ATKINSON.

Wheat, flax, oats, barley, potatoes and hay are the principal crops. Potatoes are large and mealy. Wheat is of high milling quality. Of the country between Havre and Chester an observant man who had gone through it said to the Havre Plaindealer that he believed the grain production in 1912 would be more than a million bushels. "Now mark you," he said, "of the area of land under cultivation compared to the land susceptible of cultivation; it is about the same proportion as the area of a man's hand compared with a 320 acre homestead."

The Great Northern runs through this developing country and past such grain shipping centers as the flourishing new towns of Kremlin, Gildford, Hingham, Inverness, Joplin, Chester, Galata and Concord, which have sprung up on the prairie and are supply points for a large and rapidly developing country that extends north to the Canadian line and south to Marias river. The Great Northern railroad crosses from east to west near the center of the county and the line of the Montana Central division from a junction with the main line at Havre.

Chester, 62 miles west of Havre, which is the chief town in the western part of the county and is shipping point for the Sweet Grass hills country, has grown in a few years from a cattle shipping station to a busy town

of about 800 population. It is incorporated and has many public improvements, has hotels, two banks, a newspaper, an elevator, numerous business houses and is the trading point for a territory embracing more than a million acres of good farming lands.

The leading town in this part of Montana is Havre, the county seat, which had a population of 3,624 in 1910, is a well built, growing town having a water system, electric lights, improved streets, handsome residences, large business blocks, schools, churches, three newspapers, banks, hotels, the United States land office, and a trade that extends over an extensive region. Large sums have been spent in the last three years for public improvements and for the erection of new buildings. It is a railroad division point; and the railroad shops, whose monthly pay-roll averages about $60,000, are exceeded in importance by only two others of the Great Northern system.

Hill county in its first year had a total assessed valuation of all property of $4,410,446. Real estate and improvements were valued at $2,427,527, and personal property at $1,982,919. Horses of various classes numbered 7,758, valued at $404,110; cattle of all kinds 10,511 head, valued at $202,375; sheep 156,981, valued at $313,962; and hogs of the value of $1,425. The acres of land assessed were 240,792, the average valuation being $3.44 per acre. Two telegraph companies had 752 miles of line and four telephone companies 155 miles of wire. The Great Northern railroad has 155 miles of track.

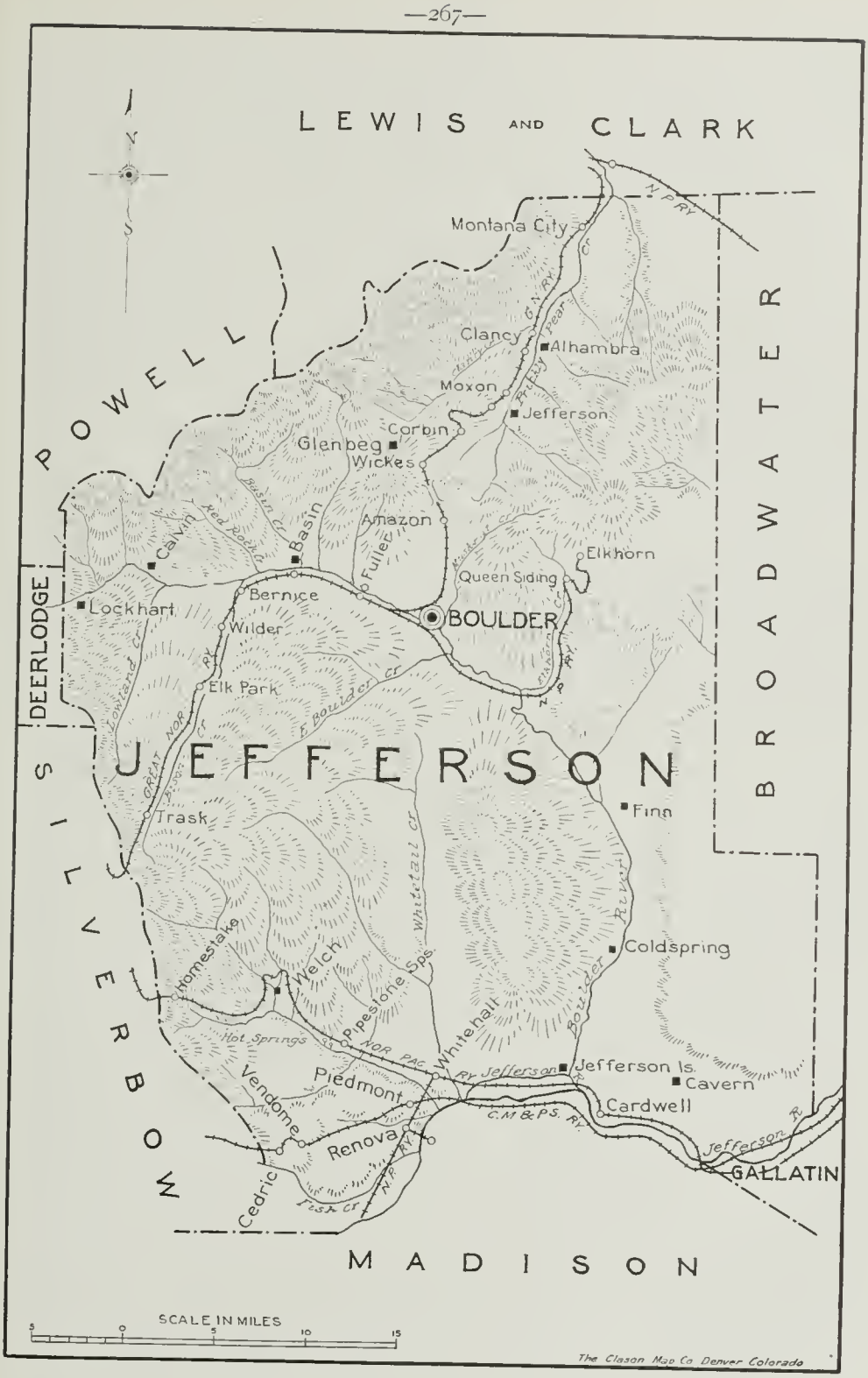
Hill county is in the Havre land district, and July 1, 1912, there were 526,760 acres of surveyed and 357,460 acres of unsurveyed, unappropriated public land.

Secretaries of Commercial Clubs at Havre and Chester will supply further information about opportunities in Hill county, on request.

JEFFERSON COUNTY.

Jefferson, one of the original counties of the territory, lies on the eastern slope of the Rocky mountains and is separated from the Missouri river valley by parallel ranges of which the Elkhorn mountains form a part. From the mountains in the western, northern and eastern boundaries the ground slopes to the Jefferson valley where the lowest elevations are found. Many mountain streams unite to form the Boulder river, which rises in the northwestern part, flows east for a number of miles and thence south to the Jefferson river with which it unites at Jefferson Island. The northwestern part of the county is drained by Prickly Pear creek, which empties into the Missouri river near Helena. The southern boundary, for the greater part, is the Jefferson river.

Mining is the principal industry, stock growing and farming being next in importance. Nearly all of the mountains that comprise a great part of the county are mineralized and scores of millions of dollars have been extracted from the mines. There are thousands of mineral claims and many producing mines. Mining is active in the Corbin-Wickes neighbor-


LEWIS AND CLARK
POWELL
BROADWATER
DEERLODGE
SILVER BOW
MADISON
GALLATIN
JEFFERSON
BOULDER
Montana City
Clancy
Alhambra
Moxon
Jefferson
Corbin
Glenbeg
Wickes
Amazon
Elkhorn
Queen Siding
Bernice
Wilder
Lockhart
Elk Park
Trask
Finn
Coldspring
Homestake
Welch
Pipestone Spg.
Hot Springs
Whitehall
Jefferson Is.
Cavern
Cardwell
Piedmont
Vendome
Renova
Cedric
Fish Cr.
Basin
Fuller
Red Rock Cr.
Boulder R.
Whitetail Cr.
Boulder River
Jefferson R.
Basin Cr.
Fuller Cr.
Boulder Cr.
Leonard Cr.
Great Nor. Ry.
N.P. Ry.
G.N. Ry.
Pacific Coast Ry.
Nor. Pac. Ry.
Jefferson Ry.
C.M. & P.S. Ry.
SCALE IN MILES
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hood, where great sums have been spent in the last few years in development work in mines that should soon be large producers of copper, and at Clancy, Boulder, Basin, Amazon and other places.

Stock growing has been an important and prosperous industry from early days. The native grasses furnish good food, little winter feeding is necessary, and many horses and cattle are shipped every year. In the mountains are large areas of good grazing lands that are not adapted for farming and the permanency of the stock industry is assured.

The area devoted to farming increases yearly. Farming without irrigation has been successful in many cases, but the chief production is from irrigated lands in the Jefferson and Boulder valleys. The Jefferson valley, about 35 miles long, extends from the canyon on the east to Waterloo on the west and embraces Jefferson Island. White Tail Deer, Fish, and Pipestone creeks water this section which contains many fine farms. The Boulder river has a long valley in which are situated many productive grain and stock ranches. Prickly Pear valley has the advantage of being near Helena.

Oats, winter wheat, rye and hay are the chief crops. Irrigated oats yield from 25 to 50 bushels per acre and a bushel often weighs 44 pounds. Winter wheat and rye yield from 30 to 50 bushels on irrigated and from 15 to 40 on non-irrigated land.

From the census bulletin, "Statistics of Agriculture—Montana," the following figures are taken:

PRINCIPAL CROPS IN 1910.

Crop.	Acres.	Production. (Bushels)	Crop.	Acres.	Production. (Tons)
Corn.....	....	....	Hay and forage, total	19,816	27,835
Oats.....	1,871	60,156	Timothy alone	1,267	1,806
Wheat....	952	20,672	Timothy and clover mixed....	734	1,326
Barley....	155	2,665	Alfalfa	3,348	8,811
Rye.....	311	6,329	Other tame and cultivated grasses (exclusive of clover alone)	180	287
Flaxseed..	....	.....	Grains cut green	796	1,289
Dry Peas..	....	908	All other hay and forage.....	13,491	14,316
Potatoes..	378	72,093			

Native grasses make excellent hay, and alfalfa yields from 3 to 6 tons to the acre. For butter, eggs, vegetables and fruits the many mining camps supply a market and the markets of Butte and Helena are in part supplied from this county. Diversified farming is pursued by many and dairying is profitable. Hardy apples produce abundantly. Excellent opportunities are present for the farmer, fruit grower, dairyman and gardener as well as for the capitalist who will help to develop mines and the stock grower. In addition to precious metals are deposits of limestone and cement rocks. The excellent granite that was used to construct the wings of the State Capitol was quarried in Jefferson county only ten miles from Helena. In the limestone formation north of Jefferson canyon is the wonderful Lewis and Clark cavern, one of the most beautiful and extensive caves in America.

Boulder, the county seat, is situated in the central part of the county, thirty-seven miles from Butte and thirty-five miles from Helena by the

Great Northern railroad. It is a thriving town with good schools, churches, banks, business houses, a newspaper, and many attractive residences. It is the home of the State School for the Deaf and Blind.

Whitehall is the chief trading point in the southern part of the county and of the Jefferson valley. It had a population of 417 in 1910 and is perhaps the most populous town. It is a railroad junction point, has good schools, churches, and large business establishments. Piedmont, a new town on the Milwaukee road, is in a good farming section. Many orchards have been planted, and vegetables are extensively grown. The excellent potatoes served on the dining cars of the Milwaukee line are grown near this place. Basin, in a mining region, is where the Heinze mill and reduction works are situated and has commercial establishments, churches and schools. Clancy, on the Great Northern, is in a prosperous mining and agricultural region and is an important railroad point. Corbin and Wickes are center of mining activity. A concentrator of 200 tons daily capacity is being built at Corbin. Elkhorn is where the famous Elkhorn group of mines is located.

In Jefferson county are four noted mineral springs that are visited by many invalids, who are benefited by the waters, and by many others in search of recreation. Alhambra and Sunnyside are on the Great Northern railroad 15 miles south of Helena and have excellent accommodations. Boulder Hot Springs are near the county seat and a costly hotel building has recently been erected. Pipestone Springs, on the Northern Pacific railroad 26 miles from Butte, is a favorite resort. Analyses of the water of these springs may be had on application to the managers.

The branch of the Great Northern railroad that extends from Butte to Helena, Great Falls and Havre traverses the northern part of the county, passing through the county seat and the principal mining districts. Through the Jefferson valley run the main line of the Chicago, Milwaukee and Puget Sound railway and the Butte branch of the Northern Pacific. Elkhorn is connected with Helena by a branch line of the Northern Pacific.

Jefferson county enjoys the advantages of being close to the cities of Butte and Helena, where farm products may be marketed and to which ores may be shipped for treatment at smelters. The average wealth and production per capita is high, and there are attractive opportunities for the homeseeker and the capitalist to acquire land at its present low valuation for farming or fruitgrowing and to purchase interests in mining properties that need the expenditure of capital to develop them into producing mines.

The area of Jefferson county is 1,612 square miles. The population in 1910 was 5,601; the number of votes cast in 1908 was 1,389 and the number of voters registered in 1912 was 1,466. Assessed valuations for the last three years were as follows: $5,886,153 in 1910; $5,934,079 in 1911; and $5,732,104 in 1912. At the last assessment real estate and improvements were valued at $1,839,002, and personal property at $1,262,969. Horses of various classes numbered 2,971, valued at $153,520; cattle of all kinds 9,597

head, valued at $215,600; sheep 10,074, valued at $29,870; and hogs of the value of $1,717. The acres of land assessed numbered 118,809, the average valuation being $6.81 per acre. Four telegraph companies had 144 miles of line and five telephone companies 168 miles of wire. The total railroad mileage was 202, the Great Northern has 76 miles, the Northern Pacific 94 miles and the Chicago, Milwaukee and Puget Sound 32 miles.

July 1, 1912, for the part of Jefferson county that is in the Helena land district there were 1,759 acres of surveyed and 120,035 acres of unsurveyed, unappropriated public land; and for the part in the Bozeman land district there were 32,969 acres of surveyed and 8,723 acres of unsurveyed, unappropriated public land.

The secretaries of Commercial Clubs at Boulder and Whitehall will furnish further information about opportunities in Jefferson county, on request.

FARMS AND FARM PROPERTY IN 1910, COMPILED FROM U. S. CENSUS REPORT.

Population	5,601
Population in 1900	5,330
Number of all farms	301
Number of all farms in 1900	235
Color and nativity of farmers:	
Native white	193
Foreign-born white	108
Negro and other nonwhite	....
Number of farms, classified by size:	
Under 3 acres	....
3 to 9 acres	2
10 to 19 acres	3
20 to 49 acres	16
50 to 99 acres	23
100 to 174 acres	115
175 to 259 acres	23
260 to 499 acres	66
500 to 999 acres	25
1,000 acres and over	28
LAND AND FARM AREA.	
Approximate land area—acres	1,056,000
Land in farms—acres	124,437
Land in farms in 1900—acres	74,385
Improved land in farms—acres	37,757
Improved land in farms in 1900—acres	23,176
Woodland in farms—acres	5,299
Other unimproved land in farms—acres	81,381
Per cent of land area in farms	11.8
Per cent of farm land improved	30.3
Average acres per farm	413.4
Average improved aces per farm	125.4
VALUE OF FARM PROPERTY.	
All farm property	$3,313,279
All farm property in 1900	$1,444,512
Per cent increase, 1900-1910	129.4
Land	$1,973,470
Land in 1900	$724,310
Buildings	$395,820
Buildings in 1900	$187,950
Implements and machinery	$132,789
Implements, etc., in 1900	$45,090
Domestic animals, poultry, and bees	$811,200
Domestic animals, etc., in 1900	$487,162
Per cent of value of all property in—	
Land	59.6
Buildings	11.9
Implements and machinery	4.0
Domestic animals, poultry and bees	24.5

Average values:	
All property per farm	$11,008
Land and buildings per farm	$7,871
Land per acre	$15.86
Land per acre in 1900	$9.74
DOMESTIC ANIMALS. (Farms and ranges)	
Farms reporting domestic animals	286
Value of domestic animals	$802,151
Cattle:	
Total number	18,338
Dairy cows	2,222
Other cows	7,418
Yearling heifers	2,197
Calves	2,502
Yearling steers and bulls	1,882
Other steers and bulls	2,117
Value	$496,514
Horses:	
Total number	3,695
Mature horses	3,019
Yearling colts	571
Spring colts	105
Value	$258,785
Mules:	
Total number	23
Mature mules	19
Yearling colts	3
Spring colts	1
Value	$2,910
Asses and Burros:	
Number	3
Value	$430
Swine:	
Total number	1,194
Mature hogs	623
Spring pigs	571
Value	$10,404
Sheep:	
Total number	5,364
Rams, ewes and wethers	5,152
Spring lambs	212
Value	$33,097
Goats:	
Number	2
Value	$11
POULTRY AND BEES.	
Number of poultry of all kinds	13,668
Value	$9,025
Number of colonies of bees	3
Value	$24

LEWIS AND CLARK COUNTY.

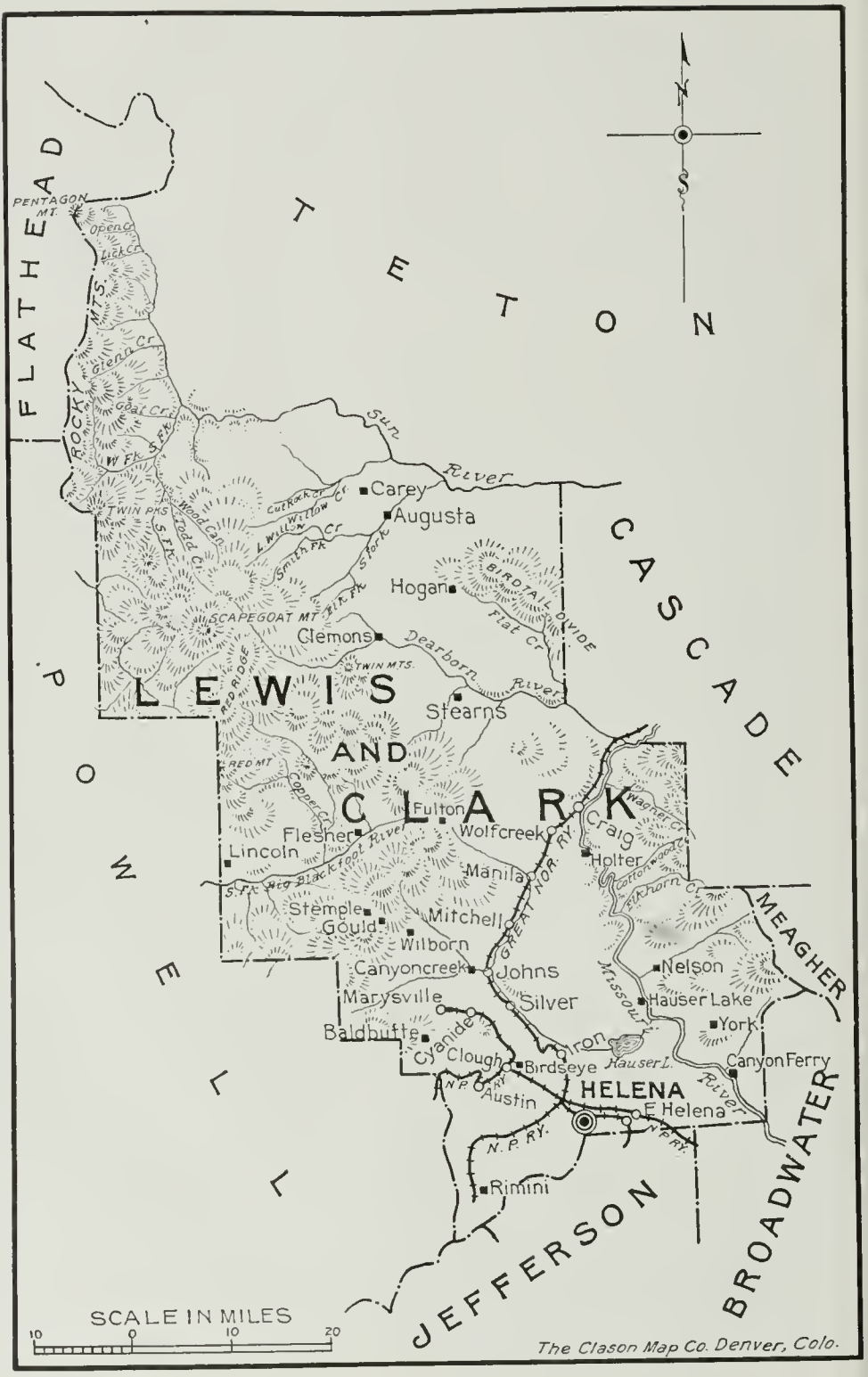
Fifth in population in 1910 and fourth in assessed valuation of property in 1912 was Lewis and Clark county. Under the name of Edgerton it was one of the original counties of the territory, the name afterwards being changed to keep in remembrance the famous explorers of 1805. It was the scene of many events of historical interest in pioneer days; and Helena, the town which grew up around the placer gold diggings of Last Chance gulch and became the financial, commercial and mining center of the state, was fittingly selected as the territorial capital and as the seat of government of Montana after its admission into the Union as a state.

Nearly all the population and the greater part of the area of Lewis and Clark county are on the eastern side of the Rocky mountains, the land sloping from high mountains to the Missouri river which runs through the county in a northeasterly direction and receives several important tributaries. A considerable area in the northern part of the county is in the Sun river drainage basin. The Prickly Pear valley, adjacent to Helena, and the Sun river valley, embrace most of the land that is under cultivation.

On the western slope of the Rockies is a sparsely settled and mountainous part of the county in which are several mining districts. The drainage is mainly into the Big Blackfoot river, and the greater part of this region is included in national forests.

Mining, stock growing and farming are the occupations of the country residents, and commercial and manufacturing pursuits employ large numbers in the cities. The county embraces a very extensive and rich mineral belt and mining has been successfully carried on since 1864 when the wonderfully rich placers of Last Chance gulch, now included within the limits of Helena, were discovered. Many other places were productive, and every year a considerable quantity of placer gold is recovered. Much land that could be profitably worked with a gold dredge will, it is thought, be found on exploration. One gold dredge costing $150,000 was installed in 1911 at Magpie near Canyon Ferry and a large increase of placer gold production is expected as a result of its operations. Near Lincoln, on the west side, are placer grounds that have been yielding gold for many years. Mines at Unionville, a few miles south of Helena, have produced many million dollars' worth of gold. The Spring Hill and other great mines are in this neighborhood. In either direction from Helena mining camps are found only a few miles apart. The principal mining town is Marysville where many large mines are producing. It is reached by a branch line of the Northern Pacific from Helena, 21 miles distant. Gould is an established mining camp in the same section. A branch line of the Northern Pacific railroad extends to Rimini, 18 miles from Helena, which is a shipping point for an extensive mineral territory in the southwestern part of the county.

To treat the ores of this and adjoining counties the American Smelting


FLATHEAD
TETON
CASCADE
POWELL
JEFFERSON
BROADWATER
MEAGHER
LEWIS AND CLARK
PENTAGON MT.
Open Lick Cr.
ROCKY MTS.
Glena Cr.
Goat Cr.
W. Fk.
S. Fk.
Sun River
Carey
Augusta
Cutbank Cr.
Willow Cr.
L. Willow Cr.
Twin Pks.
S. Fk.
Toad Cr.
Wood Cr.
Smith Fk.
Hogan
Birdtail Divide
Flat Cr.
SCAPEGOAT MT.
Clemons
Dearborn River
Twin Mts.
Redridge
Red Mt.
Copper Cr.
Stearns
Fulton
Wolfcreek
Craig
Wagner Cr.
Holter
Flesher
Lincoln
S. Fk. Blackfoot River
Manila
Stemple
Gould
Mitchell
Great Northern Ry.
Cotton Wood Cr.
Elkhorn Cr.
Wilborn
Canyoncreek
Johns
Nelson
Marysville
Silver
Hauser Lake
York
Baldbutte
Cyanide
Clough
Birdseye
Iron
Hauser L.
Canyon Ferry
N.P. Ry.
Austin
HELENA
E. Helena
Missouri River
Rimini
SCALE IN MILES
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The Clason Map Co. Denver, Colo.

Company operates a smelter at East Helena where a large number of men are employed. East Helena is a considerable town which is connected with Helena by an electric railway and two steam railroads.

Stock growing has been a leading industry from early days and the fattening of beef cattle in the Prickly Pear valley for shipment to distant markets is a branch of the business that is becoming important.

The chief agricultural districts are in the valleys of the Prickly Pear and Missouri rivers near Helena and in the northern part of the county from the Dearborn to the Sun river. Farming development has been stimulated in the Augusta neighborhood by the construction of a railroad from Great Falls, and in the country near Helena by the success of crops at the experiment station near East Helena where in 1911 on unirrigated ground yields were made of 38.13 bushels of Sixty Day oats, 43.31 of Swedish Select oats, 25.30 of barley, and 27.67 of Turkey Red wheat. Individuals have made as large or larger yields, and experiments show that it would be profitable to farm 300,000 acres of virgin lands tributary to Helena. Fruits also grow successfully and several orchards have been set out. Soil and climate conditions are favorable for the Prickly Pear valley becoming a great fruit district. For farm products of all kinds, especially for vegetables and for fruits, the city of Helena and the adjacent mining camps will provide markets, the local production at present falling far below the local demands.

From the Census Bulletin, "Statistics of Agriculture—Montana," the following figures are taken:

PRINCIPAL CROPS IN 1910.

Crop.	Acres.	Production. (Bushels)	Crop.	Acres.	Production. (Tons)
Corn.....	11	525	Hay and forage, total	36,678	57,688
Oats.....	6,069	244,299	Timothy alone	4,339	6,617
Wheat....	1,736	38,467	Timothy and clover mixed...	2,184	3,325
Barley....	515	10,935	Alfalfa	10,024	24,494
Rye.....	512	9,450	Other tame and cultivated grasses (exclusive of clover alone)	1,434	2,047
Flaxseed..	5	150	Grains cut green	956	1,767
Dry Peas..	....	3,881	All other hay and forage....	17,741	19,438
Potatoes..	837	157,553			

The enormous power that is generated at the electric power plants on the Misouri river is to be used in part to pump water from Hauser lake to irrigate about 30,000 acres of land within a few miles of Helena, and it is said that water will be supplied to the first unit of about 8,000 acres in the spring of 1913. The agricultural development of the country near Helena caused both by the extension of cultivation of unirrigated lands and by the large increase in the acres under irrigation promises to be rapid. In the past three years many new settlers who have gone into the northern part of the county have broken and planted many acres of raw land, older settlers have increased the number of acres in cultivation on their farms, and this part of Lewis and Clark county will soon become a very productive farming district.

Helena, the county seat, is the capital of Montana and is a commercial, financial and political center. The population in 1910 was 12,515. It is an attractive place of residence and is said to be the richest city per capita in the United States. November 26, 1912, the total resources of the banks of Helena were $12,527,373, or nearly $1,000 per capita. Costly private residences and large business blocks testify to the wealth of the inhabitants. A short time ago the city purchased the plant of the water company and ended a long drawn out litigation. Work on a costly passenger station for the Great Northern railroad was begun in 1912, in the same year numerous dwelling houses were erected and large sums were expended for grading and improving streets, for cement sidewalks and for modern street lamps. Enterprising citizens collected to meet a public need the sum of $400,000 to build an elegant hotel which will be opened for the reception of guests early in 1913.

Helena is the center of many religious activities. The Episcopal bishop of Montana, the bishop of the Methodist church, the bishop of the Roman Catholic diocese of Helena, and official leaders of other denominations reside in the city. Hospitals, asylums and benevolent institutions are numerous. It is an educational center having an excellent public school system, two business colleges and many denominational schools. By the aid of friends in Helena and at other places a large endowment fund has been raised for the Montana Wesleyan University, a long established institution, which has secured handsome grounds not far from the Capitol upon which will be erected a group of fine buildings. The Deaconess School for young children is a useful institution which is located a few mines from the city. The Catholic church has parochial schools, graded schools for boys and girls, a high school occupying a $500,000 building; St. Vincent's Academy, a school for girls conducted by the Sisters of Charity which has been in existence for many years and has a large attendance, and Mt. St. Charles College for boys which was opened in 1911 and has splendid buildings. A Cathedral is nearing completion that will be one of the most beautiful church buildings in America.

The Capitol, a splendid building to which two large wings have been added in the last year, contains the offices of various state executive officials, the supreme court, and the chambers of the two branches of the legislative assembly. The Montana State Fair is held every year on grounds near the city and is attended by many thousand visitors. The federal courts meet in Helena and the chief federal officers for the state have offices in the city. A United States assay office and the land office for the Helena district are located here, as are also the headquarters of the engineer in charge of the government reclamation work in Montana.

Helena has all of the advantages and conveniences that are to be found in a modern and progressive city with public, business and residence buildings that compare favorably with those of any city whatever its size, and has some advantages peculiar to itself, such as the largest natatorium in the world and one of the greatest developments of water

power on the continent. Two immense dams and generating plants have been completed and a third is under construction. The three dams develop a total head of 220 feet and will make available 100,000 horse power. This abundant and cheap power is available for use on the farm and in the mines, is transmitted in large quantities to Butte, and is an advantage for manufacturing plants that few cities possess. This almost unequalled power, the location of the city near districts that produce large quantities of grain, and the excellence of the railroad facilities are expected to unite in making Helena a flour milling center as well as to be reasons for other manufacturing establishments to be started. Helena is an important jobbing center and goods are shipped to all parts of the state. The manufactures are crackers, candies, soap, spices, extracts and baking powders, brick and clay products. There are two breweries, an iron foundry and planing mills. There are two daily and seven other newspapers and five large printing establishments.

Helena is a railroad center, being on the main line of the Northern Pacific and the place from which the Rimini, Elkhorn and Marysville branches start. The Great Northern, through the Montana Central division, gives communication with the main line at Havre, the Burlington at Great Falls and the Oregon Short Line at Butte. The New Rockford-Lewistown branch of the Great Northern on which work has been commenced will, it is expected, be extended to Helena and it is believed that the Glendive-Helena cut-off of the Northern Pacific will also be constructed within the next few years. These roads will bring eastern and central Montana into close business relations with Helena besides opening up farming and mineral districts situated between the city and the Big Belt range. The Milwaukee railroad, it is thought, will also build into Helena, and a line has been surveyed for an electric railway between Butte and Helena. The railroad pay-roll which a factor in the city's business is likely to be increased as the result of the enlargements of the shops and additions to the force in the operating departments made necessary by the growth of traffic. Passenger trains of the two roads now use in common one of the best union stations in the northwest, but the Great Northern is building for its own use, near the business center of the city, a separate and commodious station.

Lewis and Clark county abounds with opportunities in farming, fruit growing, mining and manufacturing, and is on the eve of great growth in all these lines. The area of Lewis and Clark county is 3,465 square miles and the population in 1910 was 21,853. The votes cast in 1908 were 4,416 and the number of voters registered in 1912 was 5,188. Assessed valuations for the last three years were: $20,908,650 in 1910; $20,931,129 in 1911 and $20,484,202 in 1912. At the last assessment real estate and improvements were valued at $12,729,755, and personal property at $5,824,063. Horses of various classes numbered 5,794, valued at $270,655; cattle of all kinds 19,194 head, valued at $393,735; sheep 161,091, valued at $323,660, and hogs of the value of $3,085. The acres of land assessed

numbered 627,792, the average valuation per acre being $3.40. Three telegraph companies had 1,032 miles of line and four telephone companies had 218 miles of wire. The railroad mileage was 170, the Northern Pacific having 100 miles and the Great Northern 70.

Lewis and Clark is in the Helena land district and July 1, 1912, there were 727,177 acres of surveyed and 108,333 acres of unsurveyed, unappropriated public land.

The secretary of the Commercial Club at Helena will furnish further information about opportunities in Lewis and Clark county, on request.

FARMS AND FARM PROPERTY IN 1910, COMPILED FROM U. S. CENSUS REPORT.

Population	21,853
Population in 1900	19,171
Number of all farms	529
Number of all farms in 1900	531
Color and nativity of farmers:	
Native white	336
Foreign-born white	181
Negro and other nonwhite	12
Number of farms, classified by size:	
Under 3 acres	6
3 to 9 acres	6
10 to 19 acres	7
20 to 49 acres	18
50 to 99 acres	35
100 to 174 acres	175
175 to 259 acres	33
260 to 499 acres	98
500 to 999 acres	56
Over 1,000 acres	95
LAND AND FARM AREA.	
Approximate land area—acres	2,217,600
Land in farms—acres	494,278
Land in farms in 1900—acres	443,125
Improved land in farms—acres	78,441
Improved land in farms in 1900—acres	63,682
Woodland in farms—acres	13,449
Other unimproved land in farms—acres	402,388
Per cent of land area in farms	22.3
Per cent of farm land improved	15.9
Average acres per farm	934.4
Average improved acres per farm	148.3
VALUE OF FARM PROPERTY.	
All farm property	$8,578,884
All farm property in 1900	$4,613,368
Per cent increase, 1900–1910	86.0
Land	$5,219,282
Land in 1900	$2,407,740
Buildings	$703,301
Buildings in 1900	$411,740
Implements and machinery	$225,535
Implements, etc., in 1900	$134,930
Domestic animals, poultry, and bees	$2,430,766
Domestic animals, etc., in 1900	$1,658,958
Per cent of value of all property in—	
Land	60.8
Buildings	8.2
Implements and machinery	2.6
Domestic animals, poultry, and bees	28.3

Average values:	
All property per farm	$16,217
Land and buildings per farm	$11,196
Land per acre	$10.56
Land per acre in 1900	$5.43
DOMESTIC ANIMALS. (Farms and ranges)	
Farms reporting domestic animals	509
Value of domestic animals	$2,410,355
Cattle:	
Total number	29,909
Dairy cows	2,637
Other cows	11,620
Yearling heifers	3,573
Calves	2,683
Yearling steers and bulls	3,160
Other steers and bulls	6,236
Value	$907,519
Horses:	
Total number	7,032
Mature horses	5,961
Yearling colts	874
Spring colts	197
Value	$545,734
Mules:	
Total number	111
Mature mules	68
Yearling colts	41
Spring colts	2
Value	$7,820
Asses and Burros:	
Number	1
Value	$150
Swine:	
Total number	2,926
Mature hogs	1,652
Spring hogs	1,274
Value	$26,170
Sheep:	
Total number	151,316
Rams, ewes and wethers	145,486
Spring lambs	5,830
Value	$922,835
Goats:	
Number	32
Value	$127
POULTRY AND BEES.	
Number of poultry of all kinds	28,712
Value	$20,391
Number of colonies of bees	2
Value	$20

LINCOLN COUNTY.

Occupying the northwest corner of the state and comprising a large area rich in natural resources and but slightly developed is Lincoln county, which was organized in 1909 from a part of Flathead county. The greater part of the county is mountainous and heavily timbered. Streams and lakes are numerous and the rainfall is heavier than in any other county in the state. The great river of this part of Montana is the Kootenai, which is said to have a larger flow of water than either the Missouri or the Yellowstone. Tobacco, Fisher and Yakt rivers are important tributaries draining large regions.

The industries are lumbering, mining, farming and fruit growing. Lumbering is the leading industry and large lumber mills are operated at Libby, Eureka and Warland. It has been estimated that there are twenty billion feet of merchantable timber standing in Lincoln county. Large numbers of men are employed at good wages in the lumber industry whose permanence is assured. The lumber camps furnish a local market for farm products and the wages of the workmen contribute largely to the business of the towns.

The mineralized area is extensive and rich. In the southwestern part is the Libby silver-lead mining district whose rocks are said to be a counterpart of those of the rich Coeur d'Alene district of Idaho. The Snowshoe mine in this district has produced about $1,000,000. About 40 miles southeast from Libby are the West Fisher gold fields where many discoveries of rich ores have been made and much development work done. As soon as a railroad is built into this district it will begin to produce large quantities of gold. In the northern part near Eureka are also promising mineral claims; and the Yakt district, in which is Sylvanite, contains much mineral wealth. The quartz mines present many opportunities for the successful investment of capital to aid in their development. The building of a smelter at Libby will give a great impulse to the mineral development of this section. The Libby placers were among the first discovered in Montana and have been producing gold since the early sixties. Hydraulic mining followed ground sluicing and gold dredges may be used where the ground is favorable.

The average rainfall is about 24 inches and irrigation is not necessary. The growing season is long, and the altitude away from the mountain peaks is low, being 2,308 feet at Eureka, 2,113 at Jennings, 2,055 feet at Libby, and 1,881 feet at Troy. Tobacco Plains is the largest area without a growth of timber; smaller tracts of the same kind exist in many sections, and the area of farm lands is annually added to by the clearing of cut-over timber lands. Throughout the county the conditions of soil, rainfall and climate are such as to insure prolific growths of all grains, grasses, vegetables and fruits. At the Dry Farming Congress of 1909, Willis Scott of Eureka was awarded the first prize for the best exhibit of Turkey Red wheat grown in Washington, Oregon or Montana, and at the Montana State Fair of 1911 Lincoln county took seventeen blue

DOMINION OF CANADA
IDAHO
FLATHEAD
LINCOLN
SANDERS
LOOP
MTS
East Fork
Lake Cr
River
Yaak
Gateway
Young Cr
Hayden
Shields
RANGE
PURCELL
River
Rexford
Eureka
WHITEFISH
RANGE
Mou Cr
Tobacco
Tobacco
Grave Cr
Deep Cr
Marston
Rondo
G. N. RY
Fortine
Dickey L
Stryker
Stonehill
Trego
Sylvanite
L. Kilbrennen
Tweed
Urat
Yakt
Star Cr
Ruby Cr
O'Brien Cr
Bristow Cr
Volcour
Troy
Rankin
Tuve Cr
Warland
Callahan Cr
Good Cr
G. N. RY
Kootenai Falls
Barry Cr
Kootenai
Yarnell
Cory Cr
Dunn Cr
Big War Cr
LIBBY
Flow Cr
Snow Cr
Ripley
Jennings
Keeler Cr
Stanley Cr
Deep Cr
Cherry Cr
River
Wolf Cr
Island Lake
Lakeview
Spar L
Bull L
CABINET MTS
Snowshoe
Fisher R
Fisher
Loon L
Horseshoe L
Thompson L
Cabinet
N
S
SCALE IN MILES
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ribbons for exhibits of fruit, vegetables and cereals. Among these was the first prize for each of three varieties of plums, for Bartlett pears, Wealthy apples, Concord grapes and Alsike clover. Stalks of timothy six feet high, of winter wheat six feet high, of oats and winter rye nearly seven feet high, have been shown. A potato weighing 4½ pounds, a sunflower 14 feet high, and cabbages weighing 20 pounds, and enormous rutabagas and mangelwurtzels were exhibited at the county fair. A limited quantity of corn is grown and specimens of sugar cane and tobacco have been exhibited. As a potato growing country it has few, if any, equals. In 1912 Burnett Dewey raised 200 tons of potatoes on 10 acres of ground. There were of fine grade, many weighed nearly two pounds, and three-fourths of a ton were sold at $1.50 a hundred pounds to the dining department of the Great Northern Railroad Company. Not only have the farmers of Lincoln county a good local market in the timber and mining camps, but quantities of farm products are sent north into the mining districts of Canada, close to the international boundary line.

From the Census Bulletin, "Statistics of Agriculture—Montana," the following figures are taken:

PRINCIPAL CROPS IN 1910.

Crop.	Acres.	Production. (Bushels)	Crop	Acres.	Production. (Tons)
Corn.....	....	17	Hay and forage, total	4,536	6,631
Oats.....	1,058	32,228	Timothy alone	2,077	3,001
Wheat....	2,699	35,703	Timothy and clover mixed....	1,095	1,761
Barley....	246	4,712	Alfalfa	23	65
Rye.....	46	520	Other tame and cultivated grasses (exclusive of clover alone)	54	44
Flaxseed..	....	.....			
Dry Peas..	....	100			
Potatoes..	277	28,749	Grains cut green	974	1,262
			All other hay and forage.....	313	498

As a fruit country Lincoln county has exceptional advantages. The Tobacco Plains district has a number of excellent orchards. Apples, plums, pears, cherries, berries of all kinds produce large crops of excellent quality. The same is true of the whole Kootenai valley, which has the lowest altitude of any part of the state. Many thriving orchards exist near Libby and every year a number of acres of newly cleared land are planted to orchard trees. Troy is at even lower altitude; and the whole Kootenai valley has the advantages to make it one of the greatest fruit districts in the country. The editor of the Libby News received a letter in 1910 from Louis W. Hill, at that time president of the Great Northern Railroad company and son of James J. Hill, relating to lands in the Kootenai valley, the concluding paragraph of which was as follows:

Our business men are greatly interested and pleased with the visit Governor Norris paid us recently and were greatly impressed with his able address delivered at the luncheon we tendered him, on which occasion my father stated that the lands of the Kootenai valley forest reserve, when turned open to settlement, should eventually be worth as much as the Wenatchee lands that range in price from $1,000 to $2,500 per acre. This is a strong statement, but I think your valley will prove it true.

The Kootenai river drops 60 feet at Kootenai Falls and 40 feet in the rapids, a fall of 100 feet in the distance of one mile. This wonderful water power is being developed by a company which expects to generate 80,000 horse power when the project, whose estimated cost is $6,000,000, shall be completed. Water power on the Yakt river is also utilized.

Lincoln county has much beautiful scenery, many picturesque mountain lakes and waterfalls, and a curiosity in Blackwell glacier. Many visitors are attracted to the county by the excellence of the fishing and the hunting.

The advantages of this section for wood pulp mills have finally been recognized, and Joseph A. Coram, who was prominent in the development of the copper mines of Butte, is making arrangements for the construction of a pulp mill at Libby which will cost $2,500,000, have a capacity of 165 tons of pulp every day, and give employment to about 400 men. Another pulp mill is being built on the Yakt river which will cost $1,000,000. Both companies have arranged to get wood from the Kootenai National Forest.

Three fine bridges have just been completed across the Kootenai river at Troy, Libby, and Rexford at the cost of $95,000, the balance of the bond issue of $125,000 voted for the purpose having been used to aid in road construction. A good road now extends along the Kootenai river from Gateway at the Canadian boundary to the Idaho state line.

The main line of the Great Northern railroad runs through the county and a branch line runs from Rexford north into the Fernie coal mining district of Canada. It is expected that the Libby cut-off of the Great Northern railroad, which will penetrate the rich mineral region south of Jennings, and Libby, will be built before many years; and transcontinental lines that have entered or are about to enter Montana from the east or the north may find that routes through Lincoln county are the most available for reaching the Pacific coast.

The principal towns, all on the Great Northern line, are Eureka, Libby and Troy. Eureka is the chief trading point for the Tobacco Plains country, has electric light, water works, churches, schools, a bank, a creamery, a newspaper, business buildings and attractive residences. Large saw mills give employment to many men. The town is surrounded by a very productive farming and fruit district and immense forests are in the neighborhood. Copper, cement rock and marl are mineral assets. Eureka is a growing town, and has openings for a flour mill, a cement plant and brick factory.

Libby, the county seat, is on the Kootenai river, had a population of 630 in 1910, which it is said has since increased to 1,200; has fine public, business and residence buildings, hospitals, churches, banks, newspapers, numerous stores, a water works, electric lights, many miles of graded streets and cement sidewalks. Libby is in a great timber district and has large saw mills. The tributary country is rich in mineral, has beds of marble and includes part of the Kootenai valley orchard district besides many acres of good farming land. Libby is growing rapidly, and has

cheap fuel, available water power, clay, timber for wood pulp, excelsior, and other manufactures of lumber as inducements for manufacturers.

Troy has a population of about 500, has a public school, hotels, stores, saw mills in the neighborhood, is the supply point for mining and lumbering districts, and is surrounded by lands where, because of low altitude, fertility of soil, and long growing season, the most favorable conditions are found for the growth of tender as well as hardy fruits and vegetables. It is a freight division point on the railroad.

The area of Lincoln county is 3,530 square miles and the population in 1910 was 3,638. The number of voters registered in 1912 was 1,400. Assessed valuation of all property for the last three years were: $5,165,801 in 1910; $5,242,564 in 1911; and $5,494,243 in 1912. At the last assessment real estate and improvements were valued at $2,567,470. and personal property at $426,160. Horses of all classes numbered 1,157, valued at $49,885; cattle of all kinds numbered 1,461, valued at $27,325, and hogs of the value of $1,095. The acres of land assessed numbered 511,018, the average valuation being $4.32 per acre. Three telegraph lines had 726 miles of line and four telephone companies had 137 miles of wire. The only railroad is the Great Northern, which had 157 miles of track.

Lincoln county is in the Kalispell land district and July 1, 1912, there were 1,000 acres of surveyed unappropriated public land.

The development of Lincoln county has been retarded by the putting in national forests of the greater part of its area. A considerable acreage was released the last year and filed on by homesteaders, but as recently as October 12, 1912, the national forests in the county included 1,952,195 acres. Much of this land is valuable for farming and fruit growing and the local opinion is that many thousands of acres should be eliminated from the national forests and made subject to homestead entry. It is probable that before many months have passed the national forestry service will adopt a more liberal policy that will result in opening to settlement a large acreage of very productive lands whose development will add much to the population and wealth of the county.

The secretaries of Commercial Clubs at Eureka, Libby and Troy will supply further information about opportunities in Lincoln county, on request.

FARMS AND FARM PROPERTY IN 1910, COMPILED FROM U. S. CENSUS REPORT.

Population	3,638	Average values:	
Population in 1900	.....	All property per farm	$6,104
		Land and buildings per farm	$5,144
Number of all farms	298	Land per acre	$21.21
Number of all farms in 1900	.....	Land per acre in 1900	.....
Color and nativity of farmers:		DOMESTIC ANIMALS. (Farms and ranges)	
Native white	225	Farms reporting domestic animals	247
Foreign-born white	71	Value of domestic animals	$221,234
Negro and other nonwhite	2		
Number of farms, classified by size:		Cattle:	
		Total number	2,779
Under 3 acres	.....	Dairy cows	547
3 to 9 acres	5	Other cows	908
10 to 19 acres	4	Yearling heifers	450
20 to 49 acres	30	Calves	294
50 to 99 acres	20	Yearling steers and bulls	273
100 to 174 acres	158	Other steers and bulls	307
175 to 259 acres	26	Value	$85,440

260 to 499 acres	38
500 to 999 acres	12
1,000 acres and over	5
LAND AND FARM AREA.	
Approximate land area—acres	2,259,200
Land in farms—acres	64,056
Land in farms in 1900—acres	.....
Improved land in farms—acres	15,090
Improved land in farms in 1900—acres	.....
Woodland in farms—acres	23,374
Other unimproved land in farms—acres	25,592
Per cent of land area in farms	2.8
Per cent of farm land improved	23.6
Average acres per farm	215.0
Average improved acres per farm	50.6
VALUE OF FARM PROPERTY.	
All farm property	$1,819,028
All farm property in 1900	.....
Per cent increase, 1900–1910	.....
Land	$1,358,915
Land in 1900	.....
Buildings	$173,945
Buildings in 1900	.....
Implements and machinery	$59,326
Implements, etc., in 1900	.....
Domestic animals, poultry, and bees	$226,842
Domestic animals, etc., in 1900	.....
Per cent of value of all property in—	
Land	74.7
Buildings	9.6
Implements and machinery	3.3
Domestic animals, poultry, and bees	12.5

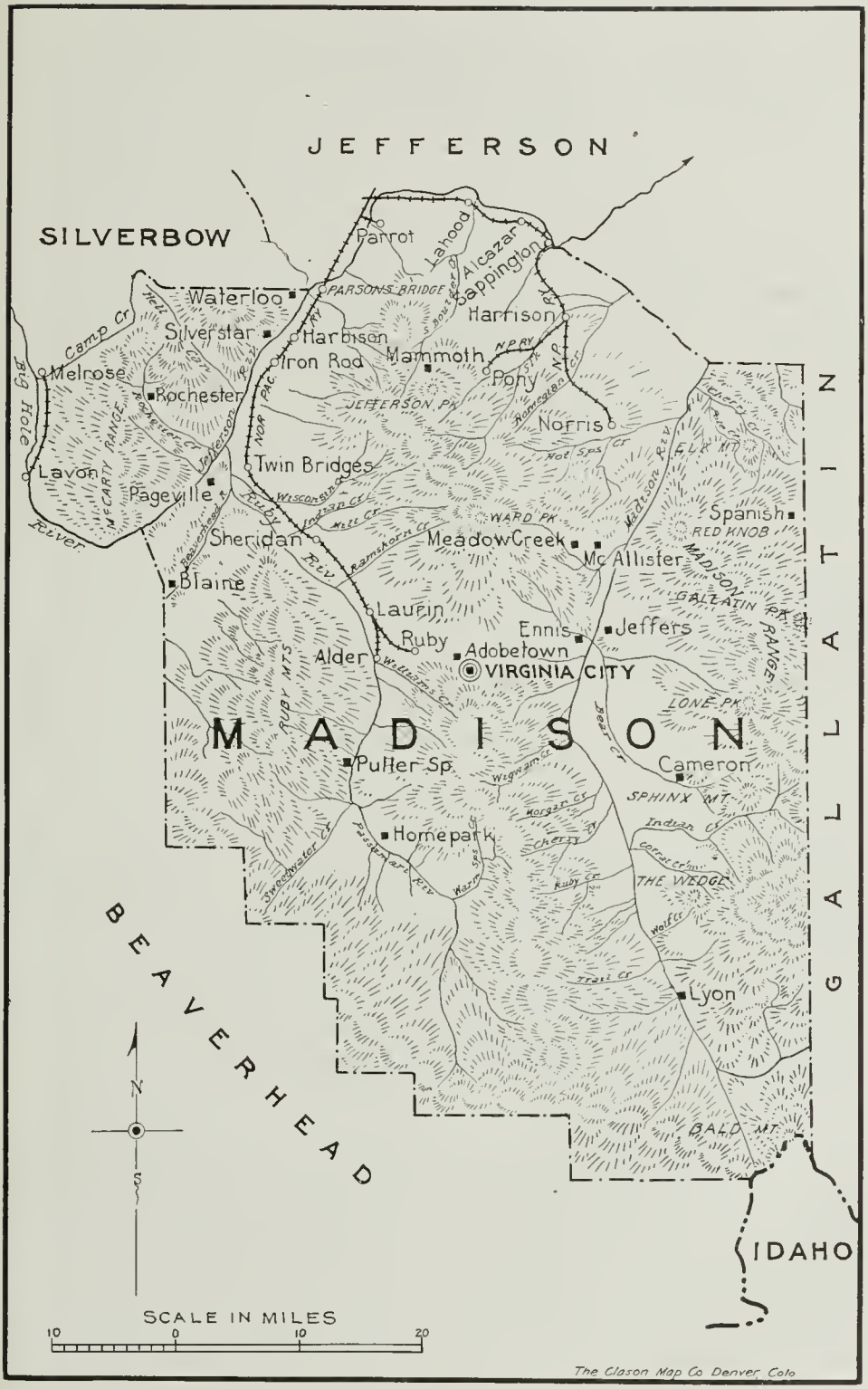
Horses:	
Total number	1,283
Mature horses	1,052
Yearling colts	191
Spring colts	40
Value	$128,396
Mules:	
Total number	3
Mature mules	3
Yearling colts	.....
Spring colts	.....
Value	$240
Asses and Burros:	
Number	.....
Value	.....
Swine:	
Total number	803
Mature hogs	489
Spring pigs	314
Value	$7,158
Sheep:	
Total number	.....
Rams, ewes, and wethers	.....
Spring lambs	.....
Value	.....
Goats:	
Number	.....
Value	.....
POULTRY AND BEES.	
Number of poultry of all kinds	9,336
Value	$5,528
Number of colonies of bees	8
Value	$80

MADISON COUNTY.

Madison county is situated in the southern part of the state, having Idaho as its southern boundary. It was one of the original counties created by the territorial legislature and one of the sixteen counties existing when the constitution of the state was adopted. Virginia City was the territorial capital and was the scene of many notable events in pioneer days.

It contains Alder gulch, discovered in 1863, which has produced more gold than any other similar area in the world and is still producing. At the mouth of the gulch are the large dredges of the Conrey Company which handle at large profit great quantities of gold bearing dirt. Quartz mining followed placer mining, and Madison has produced more gold than any other county in the state. Frequently it leads in the monthly reports of gold production. The greater part of the county is in a mineralized region and numerous mining camps exist. Silver Star, Iron Rod, Twin Bridges, Rochester, Sheridan, Virginia City, Pony, Norris and Red Bluff are towns that are surrounded by rich mining districts. In addition to gold, silver, copper and lead are ores of tungsten, iron and manganese, pure limestone and coal. Sapphires and rubies are found in placer diggings. In the numerous mining districts are many good opportunities for the prospector, the miner, and the capitalist.

Mining, stock growing and farming are the three leading industries. Some of the best bred horses, cattle and sheep in the United States are in this county. King Brook, a horse born at the Larrabee ranch in the Ruby valley, established in 1911 a trotting record for the Pacific coast. Fine herds of cattle are numerous, and much attention has been paid to


JEFFERSON
SILVERBOW
GALLATIN
BEAVERHEAD
MADISON
IDAHO
Parrot
Lahood
Alcazar
Coppington
PARSONS BRIDGE
Harrison
Waterloo
Silverstar
Harbison
Iron Rod
Mammoth
Pony
Melrose
Rochester
Big Hole R.
Camp Cr.
McCARTY RANGE
JEFFERSON PK.
Norris
Twin Bridges
Lavon
Pageville
Sheridan
Meadow Creek
Mc Allister
Spanish
RED KNOB
MADISON RANGE
GALLATIN PK RANGE
Blaine
Laurin
Ruby
Ennis
Jeffers
Alder
Adobetown
VIRGINIA CITY
RUBY MTS
LONE PK
Puller Sp.
Cameron
SPHINX MT.
Homepark
THE WEDGE
Lyon
BALD MT.
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improving the breeds of sheep. Horses, cattle and sheep are shipped in large numbers each year and sell at prices that prove their quality.

Madison county contains timbered mountain ranges, long rapid rivers, extensive and fertile valleys, and is watered by the Madison, Jefferson, Ruby, Beaverhead and Big Hole rivers and their numerous tributaries. An immense quantity of hydro-electric power is available, part of which is being utilized by the Madison River Power Company which has built seven miles from Norris a dam across the Madison river and established a large plant that generates 20,000 horse power the year around. The power is transmitted to several points in the state, to Butte and Anaconda on the west, and to Bozeman, Livingston, Billings and other places on the east. At the upper Madison canyon the same company has built an immense dam and will harness a great power beside storing large quantities of water for irrigating purposes.

A mountain range forms the eastern boundary, another is in the center, and a third in the western part. The chief argricultural districts are in the vallevs and between the ranges. The Jefferson valley extends from the northern boundary to Twin Bridges where the river is formed and embraces in its own drainage basin and those of the South Boulder and Willow creek a great extent of excellent farm land. South of Twin Bridges are the Beaverhead and Ruby valleys, the former about 15 miles long and five wide, and the latter about 30 miles long and from one to three wide. The extensive area in these valleys contain many highly improved and very productive farms. The trading points are Waterloo, Twin Bridges, Sheridan, Laurin and Alder. A part of the Willow creek valley is in Gallatin county, but the upper part is in Madison county and extends to Pony and Norris. South of Norris is the Madison valley about 36 miles long, and, including the bench lands, about 5 miles wide. Development as a farming region has been delayed by the lack of railroads. Large crops of oats, wheat and hay are raised. Meadow Creek, McAlister, Ennis, Jeffers, Cameron and Lyon are postoffices in this valley, which has room for at least five times its present farming population. Many excellent stock ranches are in this section.

In the valleys are irrigated areas and on the benches farming without irrigation has been successfu' Several projects are pending that will increase the acreage of irrigated lands and some of the large ranches are being subdivided and sold in farm lots.

Throughout the county the soil is fertile and large crops are the rule. Hay, oats and wheat are the principal crops. In January, 1913, a government contractor arranged for the shipment from Twin Bridges of 1,000.000 pounds of oats. Reports were gathered in 1911 from many farmers in different parts of the county; 50 bushels of wheat, 80 bushels of oats, and three and four tons of alfalfa to the acre were not rare yields. The oat crop of J. H. McDonald of Alder yielded an average of 107 bushels to the acre; Peter Simonson of Laurin raised 60 bushels of barley to the acre, and on the Jeffers ranch in the Madison valley wheat

threshed an average of 71 bushels to the acre. On unirrigated bench lands in the Madison valley E. F. Keller raised in 1912 a remarkable crop of wheat. Mr. Keller raised several thousand bushels of wheat; the average yield per acre was 51 bushels, a not uncommon yield, but the remarkable fact is that at the elevator the wheat weighed 67 pounds to the bushel. Potatoes are extensively grown and make large yields. P. Carney of Waterloo had 35 acres in potatoes and the yield was 250 bushels to the acre. Mr. Carney exhibited thirteen varieties of potatoes at the Montana State Fair and was awarded the Hill trophy for the best exhibit of ten varieties or more; and at the St. Paul Land Show of 1911 he won the cup for the "best individual display of potatoes." The raising of seed peas has been begun and promises to become an important industry.

The county is sparsely settled and offers unusual advantages to the homeseeker who desires to secure farming and fruit lands by purchase at low prices. The markets of Butte and Anaconda are convenient; and fruits, dairy products, eggs and chickens are always in demand.

From the census bulletin, "Statistics of Agriculture—Montana," the following figures are taken:

PRINCIPAL CROPS IN 1910.

Crop.	Acres.	Production. (Bushels)	Crop.	Acres.	Production. (Tons)
Corn.....	....	.....	Hay and forage, total	58,783	94,331
Oats.....	13,389	566,529	Timothy alone	1,985	3,126
Wheat....	4,817	119,830	Timothy and clover mixed....	6,302	12,189
Barley....	799	18,155	Alfalfa	12,575	31,835
Rye.....	17	320	Other tame and cultivated grasses (exclusive of clover alone)	6,068	12,585
Flaxseed..	31	170	Grains cut green	763	998
Dry Peas..	....	3,506	All other hay and forage.....	31,090	33,598
Potatoes..	1,241	257,751			

Although the county has no town of more than 1,000 population, there are two newspapers at Virginia City, and Sheridan. Twin Bridges and Pony each has one. The principal places are Virginia City, the county seat, an important commercial and mining center, a rich town and of great historic interest, having been the territorial capital; Pony, a mining town and trading point for the Willow Creek country; Sheridan, a pretty and thriving town, surrounded by rich farm lands and near producing mines; and Twin Bridges, which is situated at the head of Jefferson valley near the confluence of the Ruby, Beaverhead and Big Hole rivers and at the outlet of the valleys of those rivers. Twin Bridges possesses a favorable location for growth in size and business importance and undoubtedly has a very bright future before it.

The State Orphans' Home is at Twin Bridges and occupies buildings that have been erected at the cost of $110,000. It has numerous inmates and is well supported by appropriations for its maintenance.

The Northern Pacific has a branch line extending from Whitehall to Alder and another from Sappington to Pony and Norris. An electric line from Alder to Virginia City is contemplated. The extension of the

Pittsburg and Gilmore railroad from Dillon to Twin Bridges and Whitehall is a probability of the near future. It is rumored that a railroad is to be built up the Madison valley from Three Forks to furnish transportation facilities to a very extensive section.

The eastern part of Madison county is in the Bozeman land district and the western part in the Helena land district. July 1, 1912, there were 124,039 acres of surveyed and 112,682 acres of unsurveyed, unappropriated public land in the Bozeman district and 298,944 acres of surveyed and 617,468 acres of unsurveyed, unappropriated public land in the Helena district; a total of 1,153,133 acres.

The population in 1910 was 7,229. The number of voters registered in 1912 was 2,375. Assessed valuations for the last three years were as follows: $6,965,359 in 1910; $6,431,426 in 1911; and $6,391,320 in 1912. At the last assessment real estate and improvements were valued at $3,302,442, and personal property at $2,315,365. Horses of various classes numbered 9,465, valued at $390,045; cattle of all kinds 25,786 head, valued at $460,725; sheep 126,767, valued at $262,955; and hogs of the value of $12,285. The acres of land assessed numbered 527,203, the average valuation per acre being $2.78. Three telegraph lines had 146 miles of line and six telephone companies 378 miles of wire. The principal railroad is the Northern Pacific, which has 67 miles of track; the Milwaukee has six miles and the Oregon Short Line eight miles.

The secretary of the Madison County Development League at Twin Bridges will supply further information about opportunities in Madison county, on request.

FARMS AND FARM PROPERTY IN 1910, COMPILED FROM U. S. CENSUS REPORT.

Population	7,229
Population in 1900	7,695
Number of all farms	730
Number of all farms in 1900	674
Color and nativity of farmers:	
Native white	557
Foreign-born white	172
Negro and other nonwhite	1
Number of farms, classified by size:	
Under 3 acres	4
3 to 9 acres	5
10 to 19 acres	5
20 to 49 acres	20
50 to 99 acres	30
100 to 174 acres	222
175 to 259 acres	62
260 to 499 acres	183
500 to 999 acres	114
1,000 acres and over	85
LAND AND FARM AREA.	
Approximate land area—acres	2,931,840
Land in farms—acres	421,271
Land in farms in 1900—acres	317,216
Improved land in farms—acres	140,100
Improved land in farms in 1900—acres	111,836
Woodland in farms—acres	7,869
Other unimproved land in farms—acres	273,302
Per cent of land area in farms	14.4
Per cent of farm land improved	33.3
Averages acres per farm	577.1
Average improved acres per farm	191.9
Average values:	
All property per farm	$17,614
Land and buildings per farm	$12,688
Land per acre	$19.20
Land per acre in 1900	$7.95
DOMESTIC ANIMALS.	
Farms reporting domestic animals	715
Value of domestic animals	$3,186,126
Cattle:	
Total number	40,556
Dairy cows	3,491
Other cows	17,955
Yearling heifers	4,553
Calves	4,320
Yearling steers and bulls	4,763
Other steers and bulls	5,424
Value	$1,158,999
Horses:	
Total number	13,282
Mature horses	10,836
Yearling colts	1,923
Spring colts	523
Value	$1,097,271
Mules:	
Total number	158
Mature mules	115
Yearling colts	37
Spring colts	6
Value	$15,850
Asses and Burros:	
Number	6
Value	$2,140

VALUE OF FARM PROPERTY.	
All farm property	$12,858,000
All farm property in 1900	$5,645,305
Per cent increase, 1900-1910	127.8
Land	$8,088,637
Land in 1900	$2,521,360
Buildings	$1,173,266
Buildings in 1900	$667,090
Implements and machinery	$385,673
Implements, etc., in 1900	$170,830
Domestic animals, poultry, and bees	$3,210,424
Domestic animals, etc., in 1900	$2,285,125
Per cent of value of all property in—	
Land	62.9
Buildings	9.1
Implements and machinery	3.0
Domestic animals, poultry, and bees	25.0

Swine:	
Total number	4,715
Mature hogs	2,383
Spring pigs	2,332
Value	$39,374
Sheep:	
Total number	128,552
Rams, ewes, and wethers	111,758
Spring lambs	16,794
Value	$870,792
Goats:	
Number	475
Value	$1,700
POULTRY AND BEES.	
Number of poultry of all kinds	40,162
Value	$24,223
Number of colonies of bees	5
Value	$75

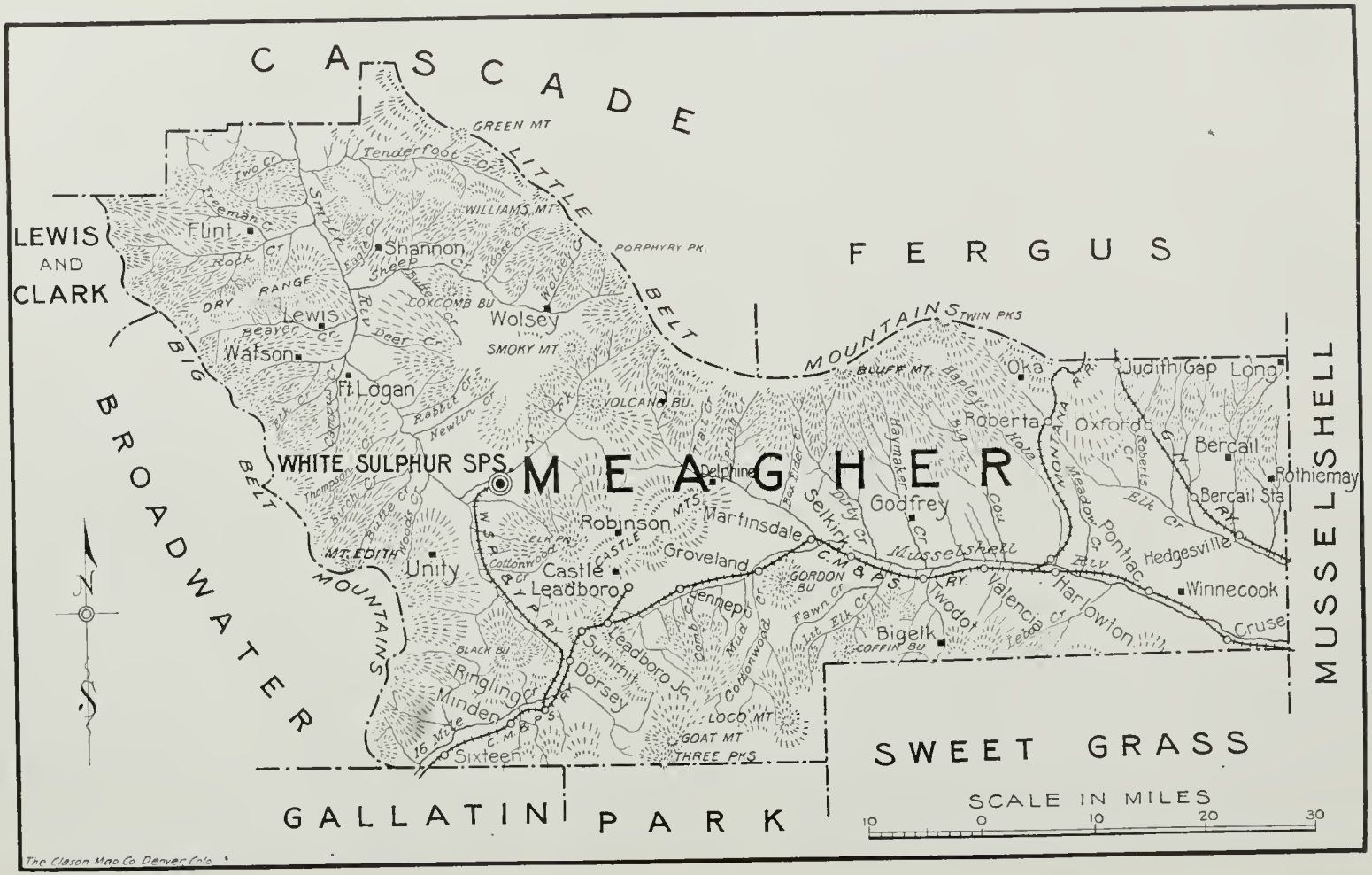
MEAGHER COUNTY.

Meagher county was one of the sixteen counties in existence when Montana was admitted into the Union as a state in 1889. It was named for General Thomas F. Meagher, some time acting governor of the territory of Montana, whose statue adorns the grounds of the capitol at Helena. Of great size when created much of its original territory has been taken for new counties. There is now pending a proposal to form a county to be known as Wheatland out of the eastern part of Meagher county and adjacent parts of Sweet Grass and Fergus counties, which will be submitted to the voters of the territory to be embraced in the new county at a special election and will probably carry. Harlowton and Judith Gap will be in the new county if it is created.

Meagher county is situated in the central part of the state. It is separated from the Missouri valley by the Big Belt range. The two ranges and outlying spurs bound it on the north and in the southeastern part are the Crazy mountains. The Musselshell rises in this county and flows east. Smith river also rises in this county and flows north, entering the Missouri river near Great Falls. A large stream is Sixteen-Mile creek which heads in the Castle mountains, flows west through a canyon of remarkable scenic beauty, and joins the Missouri river at Lombard.

The principal railroad is the Milwaukee, which crosses the southern part of the county from east to west. A railroad was built in 1910 to connect White Sulphur Springs with the main line. This road may be extended north down the Smith river valley, and it is rumored that the Shields river branch of the Northern Pacific may be continued north into Meagher county. The Billings and Northern division of the Great Northern crosses through the eastern corner of the county, and it is expected that the Lewistown-New Rockford branch of the same company, which is now building, will cross through the county on the way to Helena, opening up a section that is now without railroad facilities, and afford trackage for the contemplated Glendive-Helena cut-off of the Northern Pacific railroad.

The chief farming districts are the Smith river valley in the northern, the Musselshell valley in the southern part, and the country around Judith Gap. The county has long been and is still a great stock country.


CASCADE
LITTLE BELT MOUNTAINS
LEWIS AND CLARK
FERGUS
MUSSELSHELL
BROADWATER
SWEET GRASS
GALLATIN PARK
MEAGHER
WHITE SULPHUR SPS.
GREEN MT.
WILLIAMS MT.
PORPHYRY PK.
TWIN PKS.
BULLIFF MT.
SMOKY MT.
VOLCANO BU.
COXCOMB BU.
BLACK BU.
GORDON BU.
COFFIN BU.
LOCO MT.
GOAT MT.
THREE PKS.
MT. EDITH
DRY RANGE
BIG BELT MOUNTAINS
Flint
Shannon
Lewis
Watson
Ft. Logan
Wolsey
Unity
Castle
Leadboro
Robinson
Martinsdale
Delphine
Groveland
Lennep
Summit
Leadboro Jct.
Dorsey
Ringling
Minden
Sixteen
Bigelk
Godfrey
Roberts
Oka
Judith Gap
Long
Oxford
Bercail
Bercail Sta.
Rothiemay
Hedgesville
Winnecook
Harlowton
Crusey
Valencia
Twodot
Ponthac
Selkirk
Haymaker
Big Coulee
Meadow Coulee
Dirty Coulee
Box Elder
Trail Coulee
Cottonwood
Elk Pk.
Elk Cr.
Rock Cr.
Deer Cr.
Rabbit Cr.
Newlon Cr.
Thompson Cr.
Beaver Cr.
Freeman Cr.
Two Cr.
Tenderfoot Cr.
Sheep Cr.
Roberts Cr.
Fawn Cr.
Lebo Cr.
Meloy Cr.
Coon Cr.
Codorwoad
Hole
Lapley
Plateau
Mountain
C.M. & P.S. Ry.
W.S.R. & L. Ry.
N.P. Ry.
SCALE IN MILES
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The Clason Map Co. Denver Colo.

Large tracts of land were acquired by stockmen who ranged cattle and sheep on the open range and raised hay and grain for their own use to be fed during the winter. Lands in the valley were irrigated, and it is only within a few years that farming has been carried on to any extent on unirrigated land. Irrigated lands in the Smith river and Musselshell valleys produce large crops of wheat, oats, barley, timothy, alfalfa and vegetables. The Smith river valley is about 50 miles long by 10 or 12 miles wide. Stock growing is the chief industry, but many acres of the valley and bench lands that formerly were devoted to raising hay and to pasture are being planted to grain, and a very extensive area will be put in crops when a railroad is built through the valley. The soil is very fertile; yields of 50 to 75 bushels of oats, 35 bushels of winter and 53 bushels of spring wheat, and 2 to 4 tons of hay are reported. On the Catlin ranch it is said that 30 bushels of flax to the acre have been raised. Oats often weigh 45 to 48 pounds a bushel. Many prizes have been won by Meagher county exhibits at State Fairs. Another very productive section is the Musselshell valley, where are some of the largest and finest ranches in the state. Around Martinsdale, Two Dot and Harlowton are many productive farms both irrigated and unirrigated. The benches between the valleys are being farmed with success, the soil being fertile and the annual rainfall 19 inches.

Great development has taken place in the country near Harlowton, and around Judith Gap and Hedgesville on the Great Northern. Average yields of grains are high and some remarkable ones are reported. Thirty bushels of winter wheat is a common yield and one as high as 60 bushels is reported. Oats on George Finch's farm threshed 60 bushels to the acre, and he secured 6,000 bushels of winter wheat, some of it averaging 40 bushels an acre. John Allard threshed 5,500 bushels of winter wheat from 150 acres and 350 bushels of flaxseed, 25 bushels to the acre. Wheat near Harlowton averaged 35 bushels and sold as No. 1, and flax went 10 bushels to the acre. The Harlowton News says August Oelrichs sold to the Great Northern railway six cabbages that weighed 22 pounds; several bushels of potatoes averaging more than a pound each; two bushels of carrots averaging five pounds each; one bushel of turnips averaging about 10 pounds each, and one bushel of beets averaging about 5 pounds each.

From the census bulletin, "Statistics of Agriculture—Montana," the following figures are taken:

PRINCIPAL CROPS IN 1910.

Crop.	Acres.	Production. (Bushels)	Crop.	Acres.	Production. (Tons)
Corn.....	....	.....	Hay and forage, total	53,830	62,863
Oats.....	4,536	160,124	Timothy alone	5,349	6,720
Wheat....	1,009	20,998	Timothy and clover mixed....	2,112	2,838
Barley....	240	5,838	Alfalfa	5,381	13,059
Rye.....	72	1,242	Other tame and cultivated grasses (exclusive of clover alone)	18,969	18,465
Flaxseed..	80	1,658	Grains cut green	1,068	1,568
Dry Peas..	....	50	All other hay and forage.....	20,951	20,213
Potatoes..	202	32,288			

Ores of gold, silver, copper, lead, zinc and iron exist. Near Delpine is some activity in mining. Castle was formerly a large producer of silver.

White Sulphur Springs, the county seat, is picturesquely situated near the head of Smith river valley 18 miles from the Milwaukee railroad, with which it is connected by the White Sulphur Springs and Yellowstone Park railroad. The waters of the wonderful springs that give name to the town possess healing qualities of great value. The water has a copious flow at 110 degrees. The springs have been bought by John Ringling, the circus owner, who intends to erect here a large and costly hotel and to provide the conveniences of a great health resort. The town has a high school, graded schools, three churches, banks, two newspapers, hotels and stores. Some of the large ranches in the neighborhood are being sold in small lots and the population and business of the town is increasing.

Harlowton, in the Musselshell valley where the Judith Basin line joins the main line of the Milwaukee, is the chief town and has experienced great growth in population and business in the last three years. It is a well built, busy and grownig town, and has a large hotel, business houses, banks, a newspaper and is the distributing point for a large agricultural and stock district. Railroad shops and a railroad pay-roll contribute to its prosperity.

Judith Gap, on the Billings and Northern division of the Great Northern at the entrance to Judith Basin, is a flourishing new town in a very productive section. It is a division point on the railroad and in the large round houses and shops and in the operating department many men are employed. The town has a newspaper and numerous business houses and hotels.

Meagher county offers excellent opportunities to the homeseeker to purchase lands at low prices or to enter land under the homestead law on the benches where vacant public land may still be found. July 1, 1912, there were 225,237 acres of surveyed and 70,030 acres of unsurveyed, unappropriated public land in the Helena land district, and 28,214 acres of surveyed and 31,140 acres of unsurveyed, unappropriated public land in the Lewistown land district.

The area of Meagher county is 3,548 square miles. The population in 1910 was 4,190. The votes cast in 1908 were 829 and the voters registered in 1912 numbered 1,602. Asessed valuations for the last three years were as follows: $7,108,566 in 1910; $8,367,364 in 1911; and $8,849,621 in 1912. At the last assessment real estate and improvements were valued at $4,824,274, and personal property at $1,970,101. Horses of all classes numbered 5,997, valued at $241,630; cattle of all kinds numbered 4,640, valued at $301,343; sheep 265,874, valued at $539,935, and hogs of the value of $4,010. The acres of land assessed numbered 960,876, of the average value of $3.78. Three telegraph lines had 143 miles of line and four telephone companies 185 miles of wire The

Chicago, Milwaukee and Puget Sound railway has 141 miles of track; the White Sulphur Springs and Yellowstone Park railway about 23 miles, and the Great Northern railroad 38 miles.

The secretaries of Commercial Clubs at White Sulphur Springs, Harlowton and Judith Gap will furnish further information about opportunities in Meagher county, on request.

FARMS AND FARM PROPERTY IN 1910, COMPILED FROM U. S. CENSUS REPORT.

Population	4,190
Population in 1900	2,526
Number of all farms	400
Number of all farms in 1900	198
Color and nativity of farmers:	
Native white	301
Foreign-born white	99
Negro and other nonwhite	.....
Number of farms, classified by size:	
Under 3 acres	1
3 to 9 acres	.....
10 to 19 acres	.....
20 to 49 acres	4
50 to 99 acres	1
100 to 174 acres	199
175 to 259 acres	18
260 to 499 acres	63
500 to 999 acres	24
1,000 acres and over	90
LAND AND FARM AREA.	
Approximate land area—acres	2,410,240
Land in farms—acres	710,332
Land in farms in 1900—acres	599,204
Improved land in farms—acres	119,746
Improved land in farms in 1900—acres	52,419
Woodland in farms—acres	16,242
Other unimproved land in farms—acres	574,344
Per cent of land area in farms	29.5
Per cent of farm land improved	16.9
Average acres per farm	1,775.8
Average improved acres per farm	299.4
VALUE OF FARM PROPERTY.	
All farm property	$10,579,368
All farm property in 1900	$4,279,261
Per cent increase, 1900–1910	147.2
Land	$6,958,946
Land in 1900	$1,666,620
Buildings	$497,772
Buildings in 1900	$272,180
Implements and machinery	$188,670
Implements, etc., in 1909	$75,190
Domestic animals, poultry, and bees	$2,933,980
Domestic animals, etc., in 1900	$2,265,271
Per cent of value of all property in—	
Land	65.8
Buildings	4.7
Implements and machinery	1.8
Domestic animals, poultry, and bees	27.7
Average values:	
All property per farm	$26,448
Land and building per farm	$18,642
Land per acre	$9.80
Land per acre in 1900	$2.78
DOMESTIC ANIMALS. (Farms and ranges)	
Farms reporting domestic animals	344
Value of domestic animals	$2,926,528
Cattle:	
Total number	26,548
Dairy cows	1,017
Other cows	12,475
Yearling heifers	2,688
Calves	1,728
Yearling steers and bulls	2,831
Other steers and bulls	5,309
Value	$788,798
Horses:	
Total number	6,133
Mature horses	5,127
Yearling colts	807
Spring colts	145
Value	$418,861
Mules:	
Total number	85
Mature mules	55
Yearling colts	25
Spring colts	5
Value	$8,500
Asses and Burros:	
Number	1
Value	$300
Swine:	
Total number	1,628
Mature hogs	912
Spring pigs	716
Value	$13,838
Sheep:	
Total number	302,980
Rams, ewes, and wethers	279,799
Spring lambs	23,181
Value	$1,696,111
Goats:	
Number	24
Value	$120
POULTRY AND BEES.	
Number of poultry of all kinds	11,339
Value	$7,452
Number of colonies of bees	.....
Value	.....

MISSOULA COUNTY.

When the territory of Montana was divided into counties the extensive country drained by the Bitter Root, Clark's Fork, Flathead and Kootenai rivers was put in Missoula county. The flourishing counties of Ravalli, Missoula, Sanders, Flathead and Lincoln have been formed from Missoula county, which still retains an extensive area having a large variety of rich natural resources.

The principal industries are farming, fruit growing, lumbering and

FLATHEAD
SANDERS
POWELL
IDAHO
MISSOULA
RAVALLI
GRANITE
COEUR D'ALENE
MTS
BITTER ROOT
MOUNTAINS
ROUND MT.
LOLO PK.
MT. MORGAN
CRADOCK PK.
WARD PK.
MS DONALD PK.
MC LEOD PK.
TETON MT.
HOLLAND MT.
Ronan
St. Ignatius
Ravalli
Flathead
Arlee
Jocko P.O.
Agency
Depot
Evaro
Thomas
Desmet
MISSOULA
Bonner
Potomac
Post
Lolo
Lolo Hot Sprs.
Woodman
Mc Clain
Carlton
Toole
St. Regis
Ashmore
Martina
Superior
Cobden
Stark
Quartz
Forest
Rivulet
Iron Mtn.
Spring Gulch
Frenchtown
Primrose
Huson
Lothrop
Alberton
Tarkio
Fish Cr.
Rock Cr.
Bear Cr.
Thompson Cr.
Cedar Cr.
Trout Cr.
Sunset
Elbow L.
L. Alva
L. Inez
Clearwater L.
Placid L.
Placid Cr.
Deer Cr.
Beaver Cr.
Elk Cr.
Glacier Cr.
Jocko River
Flathead River
Crow
Mission Cr.
Mission Range
Jim Smith Cr.
Big Blackfoot Riv.
Lost Horse Cr.
Neal
Thelma
Miller Cr.
Iris
Bonita
Bairo
Nimrod
Hell Gate R.
Grass Val.
Missoula Riv.
Clinton
Stevens Mt.
East Portal
Bryson
Mirdy
Haugan
Armada
Drexel
De Borgia
Henderson
Faraker
Buford
Saltese
Evaro
Graves Cr.
Mule Cr.
Coon Cr.
Little Joe Cr.
Tamarack Cr.
Jocko
Placid
Loon Cr.
Iron Cr.
Sunset
N. Fk. Fish Cr.
Fork Cr.
Tamarack Cr.
Loon Cr.
Iron Cr.
Lolo Cr.
Burnt Fork Cr.
Bitter Root R.
Bitter Root Riv.
Soudan
Missoula
Rivuv
Jocko
Flathead
Crow
Flathead River
Mission Cr.
Elk Cr.
Glacier Cr.
Beaver Cr.
Deer Cr.
Placid Cr.
Placid L.
Clearwater L.
L. Alva
L. Inez
Elbow L.
Holland Mt.
Teton Mt.
Mc Donald Pk.
Mc Leod Pk.
Ward Pk.
Cradock Pk.
Mt. Morgan
Stevens Mt.
Round Mt.
Lolo Pk.
Bitter Root Mts.
Bitter Root Riv.
Missoula Riv.
Big Blackfoot Riv.
Jim Smith Cr.
Lost Horse Cr.
Hell Gate R.
Iris
Bonita
Bairo
Nimrod
Neal
Thelma
Miller Cr.
Clinton
Potomac
Bonner
Post
Desmet
Thomas
Evaro
Grass Val.
Missoula Riv.
Soudan
Alberton
Lothrop
Huson
Frenchtown
Primrose
Tarkio
Fish Cr.
Rock Cr.
Bear Cr.
N. Fk. Fish Cr.
Fork Cr.
Tamarack Cr.
Loon Cr.
Iron Cr.
Lolo Cr.
Burnt Fork Cr.
Bitter Root R.
Bitter Root Riv.
Rivulet
Forest
Quartz
Stark
Cobden
Superior
Martina
Ashmore
St. Regis
Toole
Iron Mtn.
Spring Gulch
Thompson Cr.
Cedar Cr.
Trout Cr.
Sunset
Coon Cr.
Little Joe Cr.
Graves Cr.
Mule Cr.
Faraker
Buford
Drexel
Armada
Haugan
Mirdy
Bryson
East Portal
Saltese
Evaro
De Borgia
Henderson
Coeur d'Alene Mts.
Stevens Mt.
Mt. Morgan
Cradock Pk.
Ward

mining. The principal farming districts are the Bitter Root and Missoula valleys and the recently opened Flathead Indian reservation. South of the city of Missoula to the boundary line of Ravalli county extends the part of the wonderful Bitter Root valley which is embraced in Missoula county and north and west lies the Missoula valley. Around Frenchtown, 17 miles from Missoula, is an old and prosperous farming community. In the Missoula valley average crops are 2½ to 3½ tons of timothy hay to the acre, 2½ tons of clover at the first crop and 2 tons at the second. Great yields of wheat and oats are reported from irrigated lands. On non-irrigated land wheat yields from 30 to 40 bushels to the acre, oats 60 bushels and barley 45 bushels. Potatoes yield about 250 bushels to the acre; many vegetables are grown; and the country is splendidly adapted for dairying and has some dairy cattle of the highest quality. While stock raising is not a leading industry, many head of beef cattle are annually shipped to Montana cities and to Pacific coast points.

In 1910 the Flathead Indian reservation, the southern and perhaps most productive part of which is in Missoula county, was opened to settlement. The reservation is about 60 miles long and about 40 miles wide and contains a million and a half acres. While the greater part of the area is mountainous and grazing land, the agricultural area is very extensive. Mission valley is one of the most beautiful and fertile in the state. On an earlier page will be found an estimate by A. J. Breitenstein of the production of the principal crops in 1911 of the valleys tributary to Missoula. The yield in the reservation has greatly increased and when the Flathead reclamation project shall be completed and a railroad built into the country the production will be multiplied many times. Even without a railroad and at this early stage of development large quantities of grain and hay are raised in the fine farming districts near the new towns of Ronan, St. Ignatius and Ravalli, and in the part of the county that ships from Dixon, Sanders county, from which point a steamboat runs up Flathead river.

Large yields of grains, grasses, vegetables and fruits are too common in the Bitter Root and Missoula valleys to excite comment and the reports that come from various neighborhoods in the Flathead reservation indicate that a very extensive country is coming into cultivation which in quantity, quality and variety of products will rival those of the valleys that have made western Montana famous. The Ronan Pioneer reports a yield of 23 bushels of flaxseed to the acre on a large field threshed by Jackson and Nice, some portions of the field yielding more than 30 bushels to the acre. Root vegetables and cabbages of remarkable size have been grown, and James M. Carver told the Ronan Pioneer that on his homestead in the Moiese district he haid raised peanuts, tomatoes and watermelons. In parts of the Mission valley all the conditions for successful fruit growing on a commercial scale are present. With the coming of a railroad rapid increase in the acreage in clutivation will take place but the remarkable progress that has already been made in

the short space of two years is shown in the following article from the Ronan Pioneer:

A carefully prepared estimate of the acreage of grain and the yield produced for the year 1912, has just been made for that territory of the Flathead north of the Northern Pacific railroad, south of Flathead lake, west of the Mission range and east of the Flathead river. This estimate will be found to have been conservatively made, from reliable data.

For convenience it has been arranged in tabulated form and is as follows:

Grain—	1912 acreage.	Yield in bushels.	1913 seed bu.	Flour and Feed.	Ship from Polson, bu.	From Ravalli, bu.	From Dixon.	1913 acreage estimated
Wheat	45,000	900,000	80,000	150,000	402,000	167,500	100,500	65,000
Oats	15,000	600,000	50,000	300,000	125,000	100,000	25,000	25,000
Barley	5,000	125,000	15,000	40,000	35,000	28,000	7,000	10,000
Flax	1,000	10,000	1,000	.....	4,500	3,600	900	2,000
Potatoes	500	75,000	5,000	20,000	25,000	20,000	5,000	1,000
Hay, tons	5,000	8,000	.....	8,000	.....	.....	.....	7,000

This makes a grand total of 71,500 acres in grain this year; with a yield of 1,710,000 bushels; 151,000 bushels for seed 1913; 510,000 bushels for flour and feed; 591,500 bushels or 52 per cent estimated will be shipped via Polson; 319,100 bushels or 37 per cent via Ravalli; 138,400 bushels or 11 per cent via Dixon; with the 1913 acreage estimated at 110,000 acres.

An estimate of the probable value of this crop shows:

Wheat, at 65c per bushel	$585,000.00
Oats, at 30c per bushel	180,000.00
Barley, at 50c per bushel	62,500.00
Flax, at $1.50 per bushel	15,000.00
Potatoes, at 30c per bushel	22,500.00
Hay, at $8.00 per ton	64,000.00
Total value	$929,000.00

The reservation had not been opened when the last census was taken.

From the census bulletin, "Statistics of Agriculture—Montana," the following figures are taken for Missoula county:

PRINCIPAL CROPS IN 1910.

Crop.	Acres.	Production. (Bushels)	Crop.	Acres.	Production. (Tons)
Corn.....	....	.....	Hay and forage total	18,970	31,576
Oats.....	9,143	353,588	Timothy alone	5,976	9,626
Wheat....	9,553	220,630	Timothy and clover mixed....	8,423	14,587
Barley....	723	20,198	Alfalfa	768	1,550
Rye.....	341	5,125	Other tame and cultivated grasses (exclusive of clover alone)	316	403
Flaxseed..	....	.....	Grains cut green	2,191	3,393
Dry Peas..	....	132	All other hay and forage.....	1,296	2,017
Potatoes..	638	115,206			

The fruit growing industry is a leading industry in Missoula county and is very profitable. Apples, cherries, plums, pears, berries, peaches in a few places, and grapes at St. Ignatius Mission, are grown. Bing and Lambert cherries have been shipped in carload lots to New York. Many varieties of apples are grown, but the McIntosh Red, which is the leading variety, attains perfection. This apple, beautiful in color, excellent in flavor and of good keeping quality, is in demand in all the markets of the world and many carloads are shipped to New York and other eastern points. The apple raising industry is capable of great development, and markets for fruit of the first quality should never be lacking. Concern-

ing the profits that may be expected from a mature apple orchard a pamphlet issued by the Missoula Chamber of Commerce says:

Horticulturists differ as to varieties, but for an orchard of say twenty acres, the following is suggested and recommended; Red McIntosh, 30 per cent; Jonathan, 10 per cent; Rome Beauty, 25 per cent; Wagner, 25 per cent; Gano, 10 per cent. In some sections the Yellow Newton, Spitzenburg, Northern Spy and others are favorites, and when planted reach a high state of development.

Wide diversity may be found in returns from orchards; sometimes it is due to conditions of soil and different varieties, but mostly from lack of care and culture. One must watch his orchard like a race horse; you cannot go fishing and expect trees to bear you golden dollars. It takes work, care and attention. Attention must be given to harrowing, irrigating, pruning, spraying, thinning, picking, packing and shipping. One must be on the watch continually. For example: An experienced orchardist who has a full bearing 10-year-old tract of twenty acres averages 80 trees to the acre and five boxes to the tree, or 400 boxes per acre. Figuring at the low estimate of $1.00 per box, with one-half deducted for expenses, leaves $200 net profit per acre, or $4,000 for the year. Orchard land of this nature is worth $700 per acre, younger orchards range in price from $250 to $350. At whatever price, the returns are surer and better than many other investments.

Lumbering is a very important industry, and the lumber mills at Bonner and St. Regis are among the largest in the northwest. Smaller mills are numerous.

A recent cession of land from Sanders county added to the already extensive mineral area of Misoula county. "No region in this or any of the mining states," said the State Mine Inspector in his report dated December, 1912, "affords to the prospector, miner and capitalist a field where the prospects for success are any better than those to be found in the region taken over by this country." Mining is actively carried on near the postoffices of Deborgis, Saltese, Clinton, in the Carter district and elsewhere. The principal mine of the county is the Iron Mountain near Superior which has a shaft 2,000 feet deep which is reached by a tunnel 5,600 feet long. Extensive deposits of placer gold are being worked in the Nine-Mile district.

The towns are Missoula, Bonner, Saltese, St. Regis, Alberton, Ravalli and Ronan. Ronan, the chief town in the Flathead reservation, has a population of 500, is incorporated, has a bank, a newspaper, business houses, and is looking forward confidently for the arrival of a railroad that will hasten the development of the fertile region of which it is the trading point. Ravalli and St. Ignatius are growing towns in the reservation; Alberton is a railroad town on the Milwaukee; Saltese is in a mineral and timbered district; St. Regis has a large saw mill, and at Bonner, six miles east of Missoula where the Big Blackfoot river emerges from a canyon, is an electric power plant and one of the largest lumber mills in the northwest. An electric railway connects Bonner with Missoula.

The city of Missoula is the metropolis of the western part of Montana. It is conveniently located at the northern end of the Bitter Root valley which extends south for about 65 miles, has the Missoula valley adjacent to it, is close to the Flathead reservation on the north and to the Big

Blackfoot valley on the east. Missoula is a well built, progressive city that has all modern improvements, good public, business and private buildings, banks with large deposits, electric lights, power and street railway, two daily newspapers, numerous large business houses, a number of manufacturing establishments and openings for many more. The Western Montana Apple Show is an annual event in Missoula and wonderful displays of Montana fruits are made. The secretary of the State Board of Horticulture, who is also the chief inspector of fruit and fruit trees, maintains an office in the city. The headquarters of the United States forestry service for the state is also at Missoula, at which is also located the United States land office for the district. Fort Missoula is an army post in the suburbs. Missoula is the seat of the University of Montana which in the few years since its establishment has grown to be an institution of great usefulness. It is a delightful place of residence and is known as "the Garden City."

Missoula is an important railroad point, being on the main line of the Northern Pacific and the Chicago, Milwaukee and Puget Sound railways, both of which have built extensive passenger and freight stations, have large yards, and a pay-roll that contributes much to the volume of business done. It is expected that the Milwaukee railroad will extend a line across the main range from Great Falls and join the existing main line at or near Bonner and that a line will be built up the Big Blackfoot and Swan rives countries that will afford them easy communication with Missoula. A necessity of the time is the building of a steam or electric railroad across the reservation to Flathead lake and no engineering difficulties stand in the way of the cheap construction of a line from Missoula, Ravalli or Dixon. Missoula is the gateway not only to the Bitter Root, but of the Missoula, Plains, Clark's Fork and Big Blackfoot valleys. The Bitter Root valley branch of the Northern Pacific runs south 64 miles to Darby. It is expected that an electric railway will soon be built from Missoula south through the valley taking a route some miles east of the steam railroad. Missoula is connected with the Coeur d'Alene mining district of Idaho by a branch of the Northern Pacific that passes through a rich lumber and mineral region in Missoula county before leaving the state.

The population of the city of Missoula was 12,869 in 1910 and 4,366 in 1900, an increase of 195 per cent. The area of the county is 4,243 square miles; and the population in 1910 was 23,596. The number of votes cast in 1908 was 4,017 and the number of voters registered in 1912 was 6,337. Assessed valuations for the last three years were as follows: $16,799,987 in 1910; $17,470,449 in 1911; and $17,869,759 in 1912. At the last assessment real estate and improvements were valued at $9,100,221, and personal property at $3,592,226. Horses of various classes numbered 23,139, valued at $270,241; cattle of all kinds numbered 15,314 head, valued at $169,778; sheep 3,294, valued at $9,620; and hogs of the value of $10,405. The acres of land assessed numbered 852,781, the average

valuation being $3.64 per acre. Three telegraph companies had 2,601 miles of line and two telephone companies had 1,314 miles of wire. The Northern Pacific Railway Company had 279 miles of track and the Chicago, Milwaukee and Puget Sound 167 miles, a total railroad mileage of 446.

There are few chances to secure land under the homestead law.

Misoula county is in the Missoula land district and July 1, 1912, there were 83,305 acres of surveyed, and 1,317,029 acres of unsurveyed, unappropriated public lands.

The secretary of the Western Montana Association of Commercial Clubs, who has an office at Missoula, will upon request answer inquiries about opportunities in Missoula county, as will also the secretaries of the Commercial Clubs at Missoula, Ronan and St. Ignatius.

FARMS AND FARM PROPERTY IN 1910, COMPILED FROM U. S. CENSUS REPORT.

Population	23,596
Population in 1900	13,964
Number of all farms	670
Number of all farms in 1900	615
Color and nativity of farmers:	
Native white	370
Foreign-born white	221
Negro and other nonwhite	79
Number of farms, classified by size:	
Under 3 acres	3
3 to 9 acres	33
10 to 19 acres	40
20 to 49 acres	35
50 to 99 acres	51
100 to 174 acres	221
175 to 259 acres	67
260 to 499 acres	137
500 to 999 acres	64
1,000 acres and over	19
LAND AND FARM AREA.	
Approximate land area—acres	2,715,520
Land in farms—acres	185,294
Land in farms in 1900—acres	148,606
Improved land in farms—acres	73,985
Improved land in farms in 1900—acres	47,982
Woodland in farms—acres	42,353
Other unimproved land in farms—acres	68,956
Per cent of land area in farms	6.8
Per cent of farm land improved	39.9
Average acres per farm	276.6
Average improved acres per farm	110.4
VALUE OF FARM PROPERTY.	
All farm property	$8,936,614
All farm property in 1900	$2,834,928
Per cent increase, 1900-1910	215.0
Land	$6,908,876
Land in 1900	$1,673,630
Buildings	$770,720
Buildings in 1900	$390,840
Implements and machinery	$271,094
Implements, etc., in 1900	$122,780
Domestic animals, poultry, and bees	$985,924
Domestic animals, etc., in 1900	$646,778
Per cent of value of all property in—	
Land	77.3
Buildings	8.6
Implements and machinery	3.0
Domestic animals, poultry, and bees	11.0

Average values:	
All property per farm	$13,338
Land and buildings per farm	$11,462
Land per acre	$37.29
Land per acres in 1900	$11.26
DOMESTIC ANIMALS. (Farms and ranges)	
Farms reporting domestic animals	640
Value of domestic animals	$961,257
Cattle:	
Total number	13,747
Dairy cows	3,074
Other cows	5,913
Yearling heifers	1,798
Calves	1,484
Yearling steers and bulls	794
Other steers and bulls	684
Value	$386,325
Horses:	
Total number	5,718
Mature horses	4,783
Yearling colts	697
Spring colts	238
Value	$501,365
Mules:	
Total number	60
Mature mules	47
Yearling colts	12
Spring colts	1
Value	$4,685
Asses and Burros:	
Number	2
Value	$800
Swine:	
Total number	5,766
Mature hogs	3,278
Spring pigs	2,488
Value	$43,245
Sheep:	
Total number	4,390
Rams, ewes, and wethers	2,908
Spring lambs	1,482
Value	$19,742
Goats:	
Number	1,377
Value	$5,095
POULTRY AND BEES.	
Number of poultry of all kinds	35,687
Value	$24,383
Number of colonies of bees	99
Value	$284

MUSSELSHELL COUNTY.

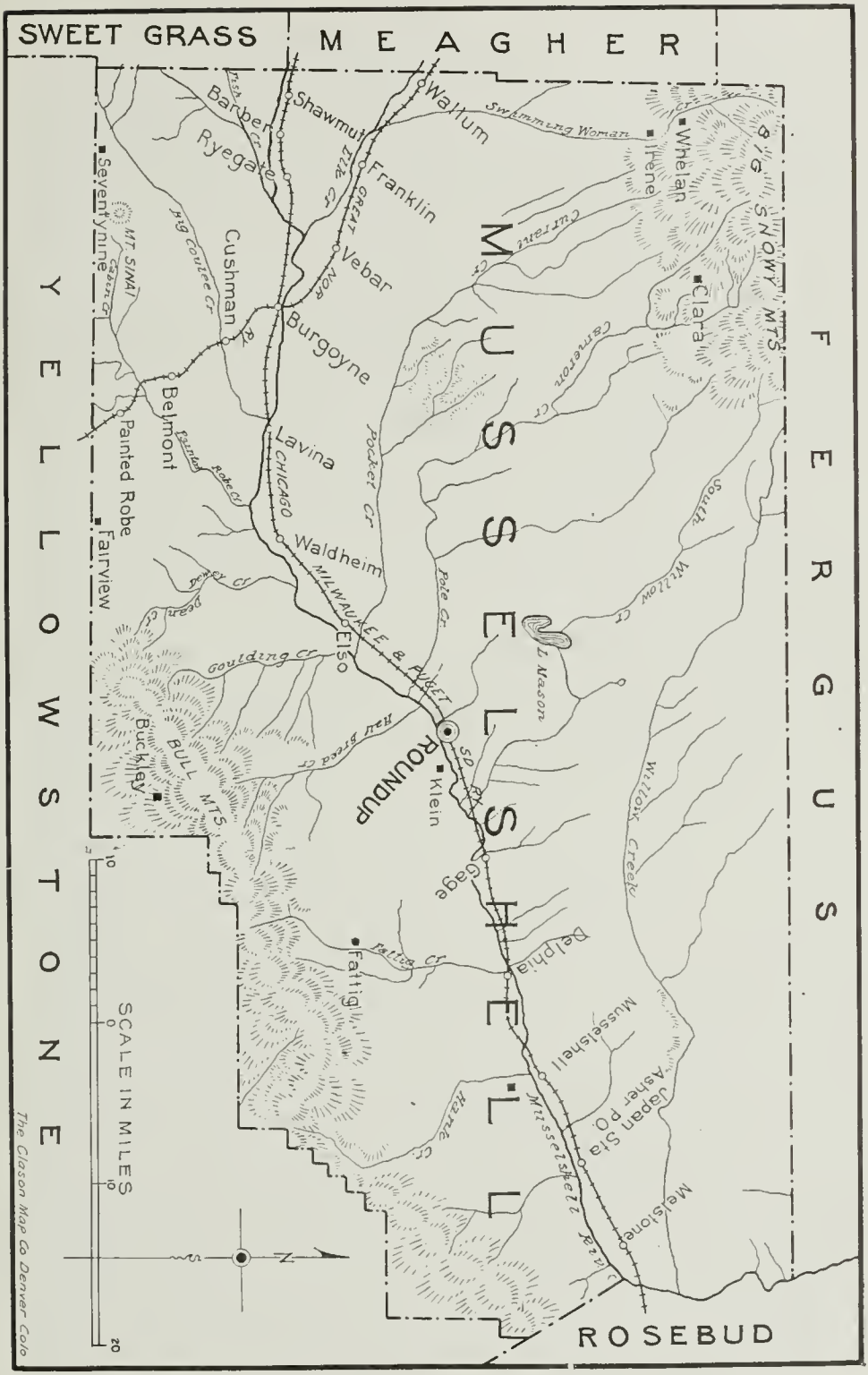
Musselshell county was created March 1, 1911, from parts of Fergus, Yellowstone and Meagher counties. It embraces a large part of the valley of the Musselshell river and is named for that stream.

The industries are coal mining, stock growing and farming. Very extensive beds of coal of good grade have long been known to exist in the Bull mountains, but they were not developed until the Chicago, Milwaukee and Puget Sound railway was built through the Musselshell valley a few years ago. Now the mines at and near Roundup have been developed so that they have the capacity to produce 5,000 tons of coal a day; at other places are smaller mines; prospects that may soon become producing mines are numerous; and a very extensive area of known coal land has not been developed at all. Only two other counties produce more coal than Musselshell, whose output in 1911 was 643,648 tons and 933,485 tons in 1912. The value of the coal produced in 1912, estimated at $1.80 a ton, was $1,680,273, and 862 men were employed in and around the mines on an average of 200 days during the year.

For a generation before the arrival of a railroad the Musselshell was a splendid stock raising country. The water was good, the grass abundant and nutritious, and the winters mild. Stock growing is still a leading industry and many carloads of wool and beef cattle are shipped annually. Farming did not become an industry of importance until the railroad was built, since which time it has experienced a remarkable growth. "There is enough grain land in Musselshell county to produce ten million bushels of wheat each year, allowing for half the land to be fallow or in forage crops," says a pamphlet issued by the commercial bodies of Musselshell county, which says further that there is room in the county for a farming population of 25,000, and that in addition to the farm lands there is grazing land in the hills of which the farmer has free use for the support of his stock.

A considerable acreage in the Musselshell valley and a smaller amount in tributary valleys are irrigated; and a plan is under consideration to conduct from the river and store in natural reservoirs a part of the water that runs off in the spring freshets for the purpose of supplying water to irrigate many thousand acres of land. The project under the Carey act has also been initiated on which little progress has yet been made. All the irrigated lands raise large crops of grasses, grains and vegetables.

The recent development has been chiefly in farming bench lands without irrigation; and wherever proper systems of cultivation have been followed profitable and in some cases surprisingly large crops have been raised of wheat, oats, flax and alfalfa. The commercial clubs at the various towns have letters on file from settlers telling of their crops and of their opinions of the country as a farming district. These reports are not confined to any one part of the county, but are of the same general tenor from all districts and indicate that in a few years Musselshell county will be producing farm products in large quantities to supplement



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the wealth yearly provided by the stock growing and coal mining industries.

The Musselshell river runs through the center of the county, the railroad runs along its banks, and the developed farm lands are found both on the north and south sides; and new farms on homestead lands or on lands bought from the Northern Pacific railroad or on some of the old stock ranches extend back for miles. There is still good homestead land to be had and cheap lands to be bought.

Roundup, the county seat, has been called "the Miracle of the Musselshell," and its growth in a few years from a small village in a cattle country to be one of the best built, busiest and most progressive towns of the northwest has been little short of marvelous. The population is about 2,000 and the city has water works, improved streets, many miles of cement sidewalks, is lighted by electricity and has cheap electric power and fuel, has good schools, churches, banks, two newspapers and many business houses. A flouring mill and a creamery are desired and there are openings for other manufacturing establishments. The great pay-roll of the coal mines is the basis of the commercial business of the town, whose trade extends for many miles in all directions. Roundup is surrounded by a rich and developing agricultural country. Klein is a busy coal camp near Roundup.

Near the eastern boundary is the town of Melstone, which is a division point on the Milwaukee railroad and is the trading point for a rapidly developing country. The new line of the Milwaukee railroad to Lewistown, Great Falls, and thence west across the Rocky mountains, will leave the main line at this point. Melstone is surrounded by a good farming district and there are undeveloped beds of coal in the vicinity.

Lavina was a noted place in the old stage coach days and the new town, a mile east of the old one, enjoys the same advantages of location and is a thriving, growing place. Many prosperous ranch homes are in the vicinity. An artesian well yielding water under good pressure is in the town.

The country around Ryegate, a town in the western end of the county, has undergone a wonderful transformation in the last five years from a grazing to a farming country. Twenty-six steam and gasoline plowing outfits were busy during one season, it is said, in turning the virgin sod of this vicinity, and now about 50,000 acres are under cultivation whereas there were practically none five years ago. The soil is good and large yields of all staple crops are made. Opportunities exist to buy good land on easy terms.

The character of the soil, the climatic conditions and sheltered positions of considerable areas of land in Musselshell county suggest that fruit growing on a commercial scale would be successful; and the growing of sugar beets on irrigated lands in the valley would surely be carried on on a large scale if there were a beet sugar factory within shipping distance.

The area of Musselshell county is 4,656 square miles. The census returns of population and agricultural statistics in 1910 in Fergus, Yellowstone and Meagher counties include the present Musselshell county. The number of voters registered in 1912 was 2,174. The assessed valuation of all property in 1911 was $9,054,570 and in 1912 $8,310,348. At the last assessment real estate and improvements were valued at $4,874,000, and personal property at $1,578,059. Horses of various classes numbered 8,204 head, valued at $314,733; cattle of all kinds numbered 9,975 head, valued at $206,667; sheep 139,878, valued at $297,099; and hogs of the value of $7,056. The acres of land assessed numbered 919,096, the average valuation being $4.01 per acre. Three telegraph lines had 198 miles of line and three telephone companies 140 miles of wire. The Great Northern railroad had 42 miles of track and the Chicago, Milwaukee and Puget Sound railway 113 miles; a total railroad mileage of 155.

July 1, 1912, there were in the Billings land district 147,585 acres of surveyed and 23,000 acres of unsurveyed, unappropriated public land, and in the Lewistown land district 257,336 acres of surveyed and 56,750 acres of unsurveyed, unappropriated public land.

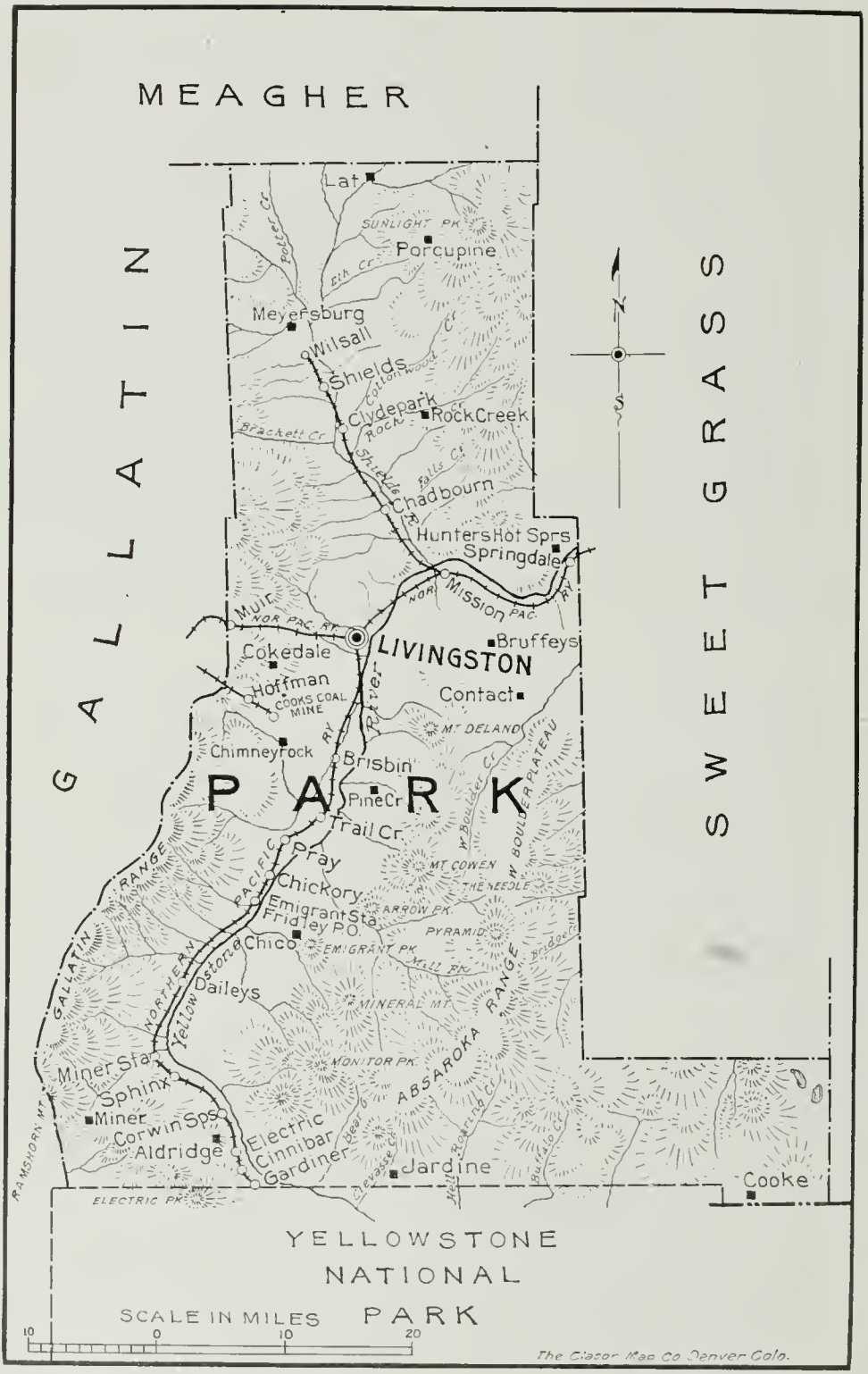
The secretaries of Commercial Clubs of Lavina, Melstone, Musselshell and Roundup will supply further information about opportunities in Musselshell county, on request.

PARK COUNTY.

Park county is one of the southern tier of counties and adjoins the Yellowstone National Park from which it was named. It was created February 23, 1887, from a part of Gallatin county and some of its original territory is now included in Carbon and Sweet Grass counties.

The county is watered by the Yellowstone and Shields rivers and their numerous tributaries. In the southern part of the county are high mountains on each side of the Yellowstone valley. The Yellowstone river emerges from the Yellowstone National Park and flows south through several canyons to Livingston, where it turns to the east. South of Livingston is a long valley of varying width; and on each side are foothills rising to the mountain ranges which contain timber, minerals, much beautiful scenery, and favorite resorts for hunting and fishing. Hunters, Chico and Corwin springs attract many health seekers and their waters have valuable curative properties.

The industries are stock raising, farming and mining. The minerals are gold, silver, copper, lead, scheelite, and coal. Emigrant gulch was formerly a producer of placer gold in large quantities and there are quartz mines in the neighborhood. Jardine and Crevasse are mining camps near the Yellowstone Park entrance; and the New World mining district in the high mountain range in the southeastern corner, of which Cook city is the trading point, is highly mineralized, has been developed to a considerable extent, and needs, it is said, only a railroad to become one of the greatest producing mineral districts in the United States.


MEAGHER
GALLATIN
SWEET GRASS
PARK
LIVINGSTON
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Porcupine
Meyersburg
Wilsall
Shields
Clyde Park
Rock Creek
Chadbourn
Hunters Hot Sprs
Springdale
Mission Pac. R.R.
Muir
Nor. Pac. Ry.
Cokedale
Bruffeys
Hoffman
Cooks Coal Mine
Contact
Mt. Delano
Chimney Rock
Brisbin
Pine Cr.
Trail Cr.
Pray
Chickory
Emigrant Sta.
Fridley P.O.
Chico
Dailey's
Miner Sta.
Sphinx
Miner
Corwin Sps.
Aldridge
Electric
Cinnibar
Gardiner
Jardine
Cooke
Mt. Cowen
The Needle
Arrow Pk.
Pyramid
Emigrant Pk.
Mill Pk.
Mineral Mt.
Monitor Pk.
Absaroka Range
W. Boulder Plateau
Gallatin Range
Northern Pacific Ry.
Yellowstone
Electric Pk.
Ramshorn Mt.
YELLOWSTONE
NATIONAL
PARK
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The developed coal mines are at Aldridge in the southern part of the county and at Trail Creek near the Gallatin county line. Marble and gypsum have been found and cement rock of a superior quality. It is proposed to erect a mill that will manufacture white cement.

Park county has much excellent grazing land on which pasture live stock of excellent grade. At the Montana State Fair in 1911, Senator, a Percheron, foaled May 6, 1908, and weighing 1860 pounds, exhibited by J. McNiven of Livingston, was declared the champion stallion of all draft breeds. The cattle of George J. Allen have won many prizes, including the special prize of $550 at the great Chicago Stock Show. There are also sheep of the highest grades.

The agricultural industry, which is growing rapidly in importance, embraces farming of irrigated lands in the valleys and of unirrigated lands on the benches and in the foothills. The soil is fertile and crop yields challenge comparison with those grown anywhere. Oats, wheat, barley and alfalfa are the chief crops in the irrigated districts and truck farming and fruit growing are also engaged in to a limited extent. All root crops make remarkable yields. On the unirrigated lands wheat, oats and barley are the leading crops.

The Yellowstone valley south of the canyon near Livingston embraces a large and productive farming district and another part of the valley lies east of the city. The largest farming district, however, is the Shields river valley embracing the northern part of the county and including arable land estimated to amount to 800,000 acres. Until the construction a few years ago of the Shields river branch line of the Northern Pacific this vast area of fertile farm land was, except in the lower part, devoted to stock raising. It has been rapidly transformed into farms, but many acres still remain unplowed. Great crops of all grains and grasses are produced in this favored region and in it were raised the bushels of wheat which, as told on another page of this book, won the $5,000 prize at the Minneapolis Land Show of 1912 for the best wheat grown in the United States. It has been estimated that there has been an increase of 125 per cent in two years in the amount of land in cultivation in the Shields river country.

Taking the county as a whole the yields of leading crops every year is about as follows per acre: Irrigated wheat, 45 to 60 bushels; unirrigated wheat, 25 to 35 bushels; irrigated oats, 70 to 90 bushels; unirrigated oats, 40 to 60 bushels. Many crops exceed these figures. Alfalfa yields from 2½ to 5 tons per acre, timothy and clover from 2 to 3 tons. About 100,000 tons of hay are annually cut and there is a good demand for all that is not needed for home consumption.

From the Census Bulletin, "Statistic of Agriculture—Montana," the following figures are taken:

PRINCIPAL CROPS IN 1910.

Crop.	Acres.	Production. (Bushels)	Crop.	Acres.	Production. (Tons)
Corn.....	21	835	Hay and forage total	38,640	69,423
Oats.....	10,933	501,548	Timothy alone	7,380	10,324
Wheat....	5,048	118,553	Timothy and clover mixed....	6,555	10,628
Barley....	849	24,822	Alfalfa	14,332	35,570
Rye.....	369	6,729	Other tame and cultivated grasses (exclusive of clover alone)	2,050	3,739
Flaxseed..	....	.....	Grains cut green	1,952	2,999
Dry Peas..	....	1,668	All other hay and forage.....	6,331	6,163
Potatoes..	797	112,213			

Park county exhibits have won many prizes at the State Fair and Expositions. Grass seed and grain for seed are in demand because of the superior quality of the products. The raising of peas for seed houses begun in 1911 and promises to become an extensive and profitable business.

Many apple trees have been set out and the production of fruit for export will soon be an industry that will add to the wealth of the country. Profitable branches of farming are raising hogs, poultry, vegetables and dairy products. Most of these products are sold at good prices either at Livingston, the mining camps, or the Yellowstone National Park, but for any surplus the shipping facilities are good and the markets of Butte and Helena convenient. Park county has been slow to make known its advantages as a farming region, but since the construction of a railroad up the Shields river has received a number of new settlers.

Neither the irrigated nor the unirrigated lands have reached a just level of prices as they may be bought at prices much lower than less productive lands sell for in other states.

The main line of the Northern Pacific railroad traverses the county. From Livingston the park branch extends south to Gardiner, a distance of fifty-four miles, and the Shields river branch north to Wilsall, a distance of twenty-eight miles. From the coal mines of Trail Creek a short railroad extends to the main line at Mountainside.

The towns are Livingston, Gardiner and Clyde Park. Gardiner is at the entrance of the Yellowstone National Park and is a busy place during the season. It is also the trading point for a rich mining country, including the Cooke City district, access to which is through the park. Clyde Park is a new growing town in the fertile and developing Shields river valley, has a bank, a newspaper, a creamery, and an elevator.

Livingston, the county seat, is a thriving little city, whose population increased from 2,778 in 1900 to 5,359 in 1910, a gain of 93 per cent. It is a division point on the Northern Pacific railroad and has the largest machine shops between Brainerd, Minn., and Tacoma, Wash., the monthly pay-roll amounting to $80,000. No town of the United States of like population has, it is believed, a railroad station building as elegant and costly as that of the Northern Pacific at Livingston. has fine public buildings, excellent schools, parked streets, cement sidewalks, a public library, banks, two daily newspapers, many business houses and numerous attractive private residences. Work has begun on a federal building to

cost $100,000. The town does a large trade with a fertile and developing country and has openings for manufacturing establishments. Only a small part of the great water power of the Yellowstone river is utilized. Livingston is an enterprising, prosperous and growing town.

The main entrance to the Yellowstone National Park is at Gardiner and through it passes the greater part of the tourists who annually visit the unequalled wonderland. In 1912 the number of visitors was 22,970 and still larger numbers are expected for each of the future years. Those who come from a distance and make the regular trip through the Yellowstone Park would be well repaid if they would extend their trip for a few days and visit the beautiful mountain districts that lie north of the Park in Madison, Gallatin and Park counties.

The area of Park county is 2,675 square miles. The population in 1900 was 10,731. The number of votes cast in 1908 was 2,559 and the number of voters registered in 1912 was 3,700.

Assesed valuations for the last three years were as follows: $8,861,320 in 1910; $9,015,237 in 1911; and $9,236,390 in 1912. At the last assessment real estate and improvements were valued at $5,434,294, and personal property at $2,276,060. Horses of various kinds numbered 6,544, valued at $372,985; cattle of all kinds 12,768 head, valued at $258,555; sheep 84,733, valued at $193,380; and hogs of the value of $13,355. The acres of land assessed numbered 619,559, the average valuation being $4.07 an acre. Three telephone companies had 258 miles of wire. Telegraph lines follow the railroad tracks. The Northern Pacific railroad has 145 miles of track and the Yellowstone Park railroad 5 miles, which is a total of 150 miles.

July 1, 1912, there were 81,586 acres of surveyed and 1,742 acres of unsurveyed, unappropriated public land in the Bozeman land district, and 5,226 acres of surveyed and 20,424 acres of unsurveyed, unappropriated public land in the Helena land district.

The secretaries of Commercial Clubs at Livingston and Clyde Park will supply further information about opportunities in Park county, on request.

FARMS AND FARM PROPERTY IN 1910, COMPILED FROM U. S. CENSUS REPORT.

Population	10,731
Population in 1900	7,341
Number of all farms	730
Number of all farms in 1900	532
Color and nativity of farmers:	
Native white	564
Foreign-born white	164
Negro and other nonwhite	2
Number of farms, classified by size:	
Under 3 acres	1
3 to 9 acres	14
10 to 19 acres	6
20 to 49 acres	11
50 to 99 acres	17
100 to 174 acres	216
175 to 259 acres	54
260 to 499 acres	187
500 to 999 acres	126
1,000 acres and over	98
LAND AND FARM AREA.	
Approximate land area—acres	1,712,000
Land in farms—acres	523,317

Average values:	
All property per farm	$16,777
Land and buildings per farm	$13,049
Land per acre	$16.04
Land per acre in 1900	$5.45
DOMESTIC ANIMALS. (Farms and ranges)	
Farms reporting domestic animals	686
Value of domestic animals	$2,351,342
Cattle:	
Total number	22,490
Dairy cows	3,211
Other cows	7,529
Yearling heifers	2,950
Calves	2,508
Yearling steers and bulls	2,582
Other steers and bulls	3,660
Value	$636,058
Horses:	
Total number	8,306
Mature horses	6,981
Yearling colts	1,015
Spring colts	310
Value	$760,640

Land in farms in 1900—acres	258,810
Improved land in farms—acres	110,902
Improved land in farms in 1900—acres	44,566
Woodland in farms—acres	27,680
Other unimproved land in farms—acres	384,735
Per cent of land area in farms	30.6
Per cent of farm land improved	21.2
Average acres per farm	716.9
Average improved acres per farm	151.9
VALUE OF FARM PROPERTY.	
All farm property	$12,246,979
All farm property in 1900	$2,909,598
Per cent increase, 1900–1910	320.9
Land	$8,392,250
Land in 1900	$1,410,760
Buildings	$1,133,812
Buildings in 1900	$276,640
Implements and machinery	$349,387
Implements, etc., in 1900	$112,650
Domestic animals, poultry, and bees	$2,371,530
Domestic animals, etc., in 1900	$1,109,548
Per cent of value of all property in—	
Land	68.5
Buildings	9.3
Implements and machinery	2.9
Domestic animals, poultry, and bees	19.4
Mules:	
Total number	115
Mature mules	84
Yearling colts	29
Spring colts	2
Value	$11,805
Asses and Burros:	
Number	11
Value	$2,430
Swine:	
Total number	4,058
Mature hogs	2,577
Spring pigs	1,481
Value	$30,007
Sheep:	
Total number	161,637
Rams, ewes, and wethers	130,491
Spring lambs	31,146
Value	$910,216
Goats:	
Number	39
Value	$186
POULTRY AND BEES.	
Number of poultry of all kinds	31,314
Value	$19,655
Number of colonies of bees	65
Value	$533

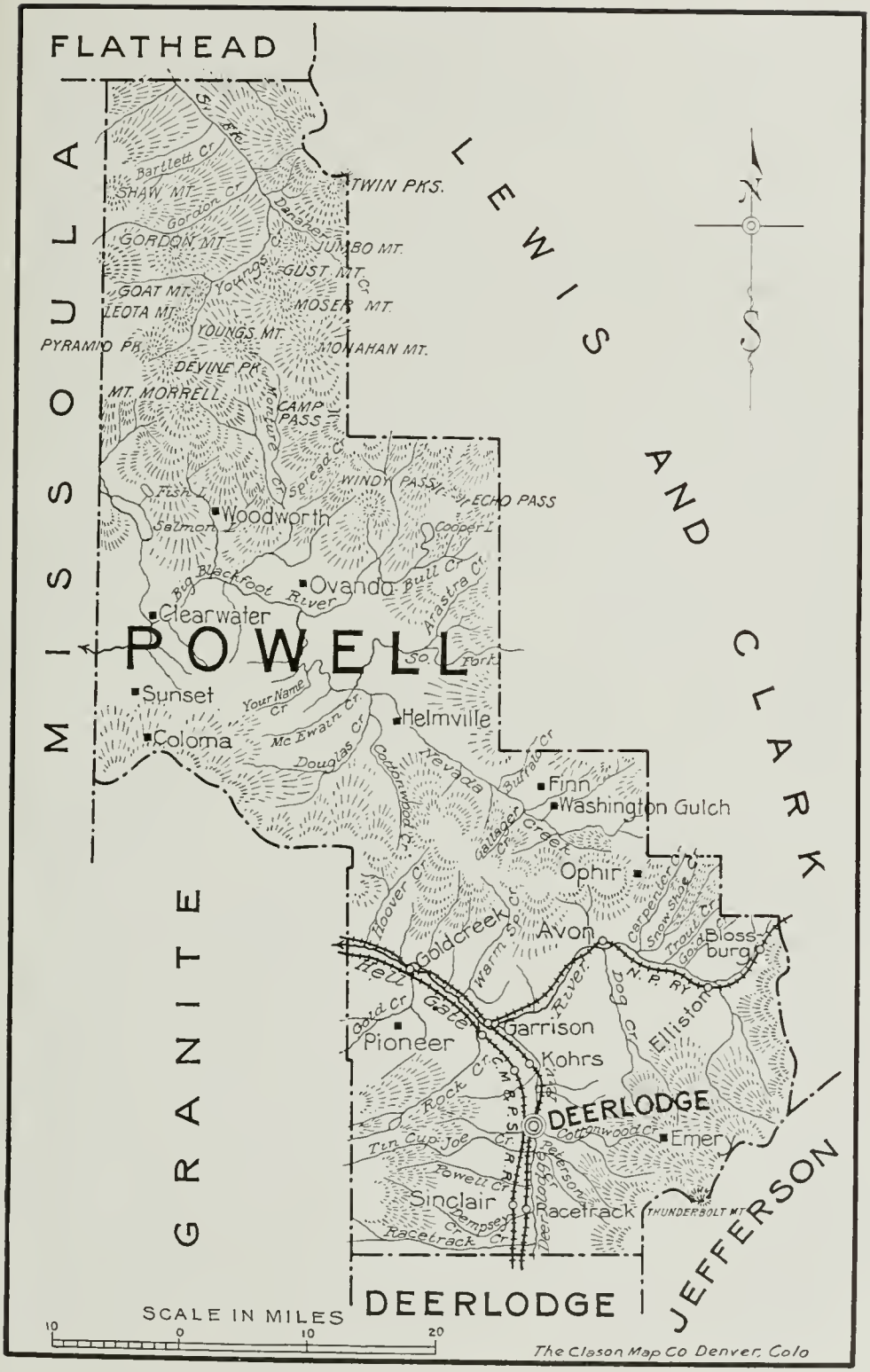
POWELL COUNTY.

Powell county lies on the western slope of the Rocky mountains west of Lewis and Clark and north of Deer Lodge counties and was organized in 1901. One of the original counties of Montana was Deer Lodge, whose territory has been divided into the four counties of Silver Bow, Deer Lodge, Granite and Powell. Within Powell county are much of the best lands the original county contained, and it has retained as county seat Deer Lodge, which is one of the oldest and most attractive towns in the state.

In 1858 Granville Stuart, an honored pioneer who now lives at Butte, and five companions made at Gold creek in what is now Powell county the discovery of placer gold which, it is claimed, led to the settlement of Montana. Though unable at the time to work the placer they returned and began work in 1862; the news of their discovery led to the prospecting of other districts, and Bannack and Alder gulch were discovered. Gold-seekers in large numbers flocked into the country and a territory was created and named Montana.

The industries are mining, stock growing and farming. The placers have been worked from early days and much gold has been taken from them. On both sides of Deer Lodge valley are quartz mines and mineral claims. "Some of the best mining opportunities in any district of the state are to be found in the several mining properties in the upper Ophir and Snow Shoe districts," says the State Mine Inspector. Near Helmville and Ovando several gold and copper properties have been developed, and in the neighborhood of Elliston there is much activity in mining. On Dry Cottonwood creek, 14 miles southeast of Deer Lodge, many sapphires have been mined.

Powell county is well timbered, especially in the northern part, and


FLATHEAD
LEWIS AND CLARK
MISSOULA
GRANITE
JEFFERSON
POWELL
DEERLODGE
DEERLODGE
Bartlett Cr.
SHAW MT.
Gordon Cr.
GORDON MT.
Danaher
TWIN PKS.
JUMBO MT.
GUST MT.
Youngs Cr.
GOAT MT.
LEOTA MT.
MOSER MT.
YOUNGS MT.
PYRAMID PK.
MONAHAN MT.
DEVINE PK.
MT. MORRELL
CAMP PASS
Spread Cr.
WINDY PASS
ECHO PASS
Fish L.
Salmon L.
Woodworth
Cooper L.
Big Blackfoot River
Ovando
Bull Cr.
Arastra Cr.
Clearwater
Sunset
Your Name Cr.
Coloma
Mc Ewan Cr.
Douglas Cr.
Helmville
Cottonwood Cr.
Nevada
Finn
Washington Gulch
Gallagher Creek
Ophir
Hoover Cr.
Goldcreek
Avon
Carpenter Cr.
Snowshoe Cr.
Trout Cr.
Bloss-burg
Hell Gate
Warm Spr. Cr.
Gold Cr.
Pioneer
Garrison
Kohrs
Rock Cr.
C. M. & P. S.
DEERLODGE
Cottonwood Cr.
Emery
Tin Cup Joe
Powell Cr.
Sinclair
Racetrack
Dempsey Cr.
THUNDERBOLT MT.
SCALE IN MILES
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lumbering is an industry of importance. A large part of the land is mountainous and where it is not covered by timber is a luxuriant growth of native grasses. Much attention has been paid to improving the breeds of live stock and Powell county is noted for the excellence of its horses, cattle and sheep. Many car loads of beef cattle and wool are annually shipped.

The Deer Lodge valley where irrigation is practiced contains many productive farms. A number of large ranches in the vicinity of Deer Lodge have recently changed hands and will be sold in farms of moderate size with the result of adding greatly to the number of farms in the valley. The valley of the Little Blackfoot is not extensive but contains many good farms. Nevada creek valley is larger and in it are raised large crops of hay and grain. The Big Blackfoot valley is a fine stock country which will change in part to a farming district when railroads are built into it. The soil is fertile, all grains do well, and in few sections can such profuse yields of timothy be secured.

From the Census Bulletin, "Statistics of Agriculture—Montana," the following figures are taken:

PRINCIPAL CROPS IN 1910.

Crop.	Acres.	Production. (Bushels)	Crop.	Acres.	Production. (Tons)
Corn.....	6	210	Hay and forage total	47,263	75,900
Oats.....	4,444	183,556	Timothy alone	2,359	4,197
Wheat....	1,189	31,965	Timothy and clover mixed....	8,080	15,289
Barley....	267	7,135	Alfalfa	4,256	11,157
Rye.....	324	6,448	Other tame and cultivated grasses (exclusive of clover alone)	7,484	9,890
Flaxseed..	....	.....	Grains cut green	512	946
Dry Peas..	....	859	All other hay and forage.....	24,572	34,421
Potatoes..	448	82,234			

On some of the large ranches in the Big Blackfoot valley farming has been successfully conducted on a large scale and on many small farms and homestead claims excellent crops have been raised. The arable area is extensive, but its agricultural development has been held back by the lack of railroads. The northern part of Powell county is likely to be the scene of great activity in railroad construction within a short time, and when railroads shall be operated there the country will undergo a rapid transformation. It is now almost exclusively a stock growing district, but when it is made possible to transport farm products to market by rail the fertile plough lands in the valleys, on the benches and foothills, will be devoted to farming and the higher and rougher lands will be used for grazing live stock. Cultivated grasses make large yields and the native grasses are abundant and nutritious; water is plentiful; the climate is good and the soil fertile; wood for fuel is abundant; as soon as a railroad reaches this district it should attract a large population to engage in diversified farming for which the country has so many advantages.

The location of Powell county close to the cities of Butte, Anaconda, Missoula and Helena insures convenient markets for all products. Truck

gardening, raising poultry and eggs are profitable, and the county has unusual advantages for the dairyman.

The main line of the Northern Pacific, after crossing the main divide, follows the course of the Little Blackfoot river and at Garrison is joined by the line extending from Butte through the Deer Lodge valley. Through the latter valley the Milwaukee railroad runs. At Bonner a logging road, which is believed to be a forerunner of a branch of the Milwaukee, runs up the Big Blackfoot river into Powell county. When the Milwaukee railroad was built four years ago Deer Lodge was made a division point. Many men are employed in the shops and in the operating department, to pay whose wages requires the disbursement of a large sum monthly. The expansion of business and the growth of the town that has taken place in the past four years is in part due to this fact. The Milwaukee railroad which is building from Lewistown to Great Falls is expected to extend its line across the Rocky mountains into Powell county to make connection with the main line at Bonner and with the long branch that is expected to be constructed through the Big Blackfoot valley and thence by way of Swan river to Kalispell and north into Canada.

Deer Lodge, the county seat, was prominent in the history of Montana in territorial days. It is a city of homes, is beautifully located, has well laid out streets bordered by shade trees, has many churches, fine graded schools, is the seat of St. Mary's Academy for girls and of the College of Montana, an old, well equipped and well endowed institution of higher learning. The town has many handsome public and private buildings, banks, newspapers, and commercial establishments. About 200 new buildings were erected in 1910 and 1911 and large sums were spent on public improvements including a new sewer system and several miles of sidewalks. The Milwaukee railroad has built a fine depot and employs about 4,000 men at good wages. Their number may be increased if certain plans now under consideration by railroad officials are carried out. In 1912 over fifty residences were built, a $75,000 hotel completed, several large business houses constructed and the railroad shops enlarged. The Montana State Prison is located at Deer Lodge, and the furnishing of supplies to the inmates and the guards is a considerable item in the town's business.

Other towns are Elliston on the Little Blackfoot, a mining center; Garrison, a railroad junction point and the trading place for a considerable territory; Ovando and Helmville. Helmville is the principal town in the northern part of the county and is surrounded by a good farming region which will experience rapid development when the railroad comes.

The area of Powell county is 2,559 square miles. The population in 1910 was 10,731. The number of votes cast in 1908 was 1,200, and the number of voters registered in 1912 was 1,825.

Assessed valuations for the last three years were as follows: $5,671,900 in 1910; $6,066,999 in 1911; and $6,125,211 in 1912. At the last assessment real estate and improvements were valued at $2,992,229, and personal

property at $1,252,752. Horses of various classes numbered 4,431, valued at $189,035; cattle of all kinds 13,164 head, valued at $268,167; sheep 97,821, valued at $198,321; and hogs of the value of $2,110. The acres of land assessed numbered 609,670, the average valuation being $3.09 an acre. Three telegraph companies had 1,308 miles of line and seven telephone companies 617 miles of wire. The Northern Pacific railroad has 95 miles of track and the Chicago, Milwaukee and Puget Sound 45 miles. July 1, 1912, there were 102,466 acres of surveyed and 225,000 acres of unsurveyed, unappropriated public land in the Helena land district, and 9,431 acres of surveyed and 19,320 acres of unsurveyed, unappropriated public land in the Missoula land district.

The secretaries of Commercial Clubs at Deer Lodge and Ovando will supply further information about opportunities in Powell county, on request.

FARMS AND FARM PROPERTY IN 1910, COMPILED FROM U. S. CENSUS REPORT.

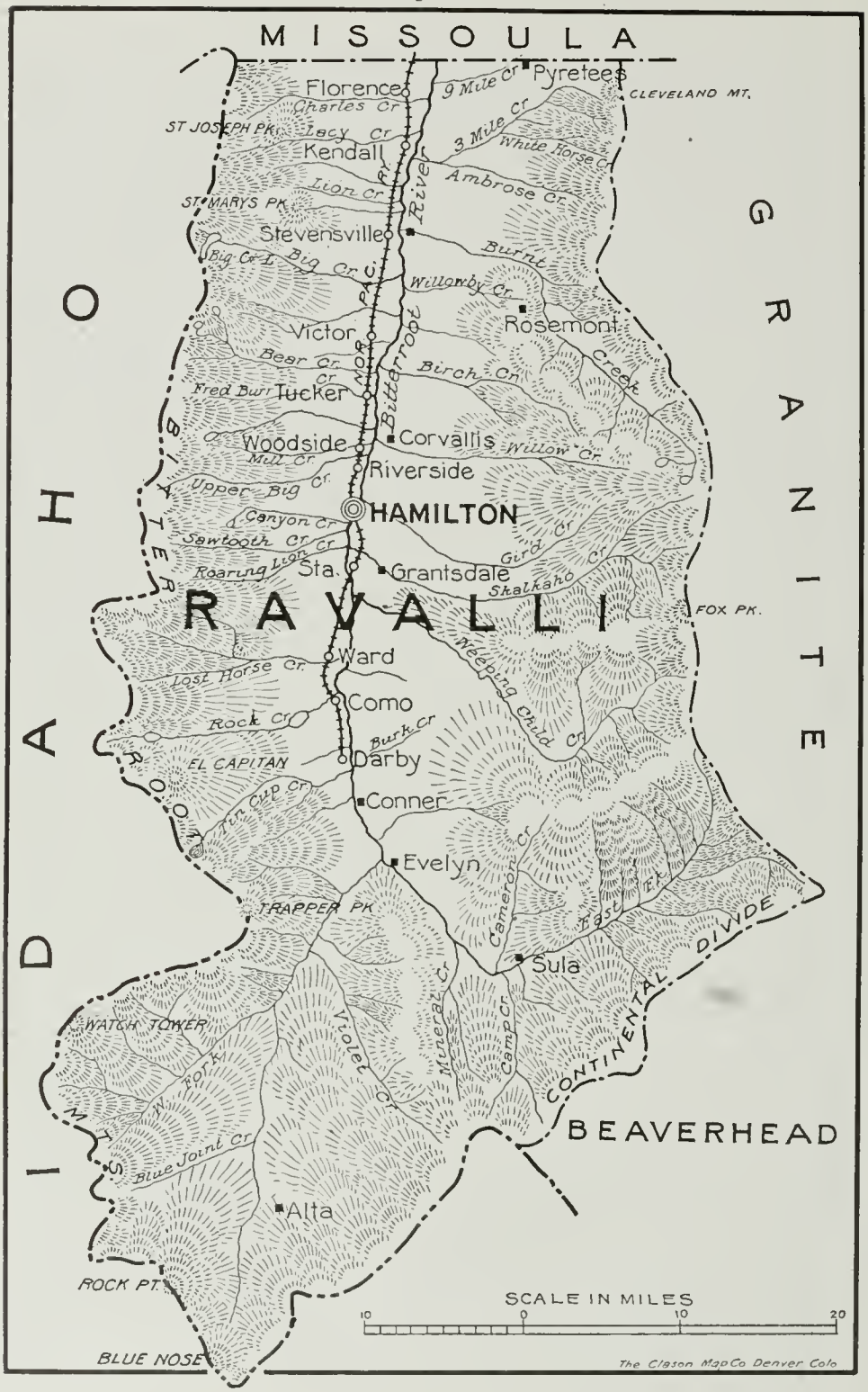
Population	5,904
Population in 1900	.....
Number of all farms	377
Number of all farms in 1900	.....
Color and nativity of farmers:	
Native white	220
Foreign-born white	157
Negro and other nonwhite	.....
Number of farms, classified by size:	
Under 3 acres	.....
3 to 9 acres	.....
10 to 19 acres	1
20 to 49 acres	9
50 to 99 acres	12
100 to 174 acres	109
175 to 259 acres	25
260 to 499 acres	86
500 to 999 acres	59
1,000 acres and over	76
LAND AND FARM AREA.	
Approximate land area—acres	1,637,760
Land in farms—acres	370,984
Land in farms in 1900—acres	.....
Improved land in farms—acres	69,350
Improved land in farms in 1900—acres	.....
Woodland in farms—acres	24,848
Other unimproved land in farms—acres	276,786
Per cent of land area in farms	22.7
Per cent of farm land improved	18.7
Average acres per farm	984.0
Average improved acres per farm	184.0
VALUE OF FARM PROPERTY.	
All farm property	$7,525,472
All farm property in 1900	.....
Per cent increase, 1900-1910	.....
Land	$4,833,755
Land in 1900	.....
Buildings	$599,875
Buildings in 1900	.....
Implements and machinery	$202,006
Implements, etc., in 1900	.....
Domestic animals, poultry, and bees	$1,889,836
Domestic animals, etc., in 1900	.....
Per cent of value of all property in—	
Land	64.2
Buildings	8.0
Implements and machinery	2.7
Domestic animals, poultry, and bees	25.1

Average values:	
All property per farm	$19,961
Land and buildings per farm	$14,413
Land per acre	$13.03
Land per acre in 1900	.....
DOMESTIC ANIMALS. (Farms and ranges)	
Farms reporting domestic animals	359
Value of domestic animals	$1,873,338
Cattle:	
Total number	28,981
Dairy cows	1,961
Other cows	13,529
Yearling heifers	3,025
Calves	2,953
Yearling steers and bulls	3,259
Other steers and bulls	4,254
Value	$808,028
Horses:	
Total number	6,455
Mature horses	5,328
Yearling colts	951
Spring colts	176
Value	$547,409
Mules:	
Total number	126
Mature mules	106
Yearling colts	17
Spring colts	3
Value	$12,060
Asses and Burros:	
Number	4
Value	$2,800
Swine:	
Total number	2,160
Mature hogs	1,101
Spring pigs	1,059
Value	$16,178
Sheep:	
Total number	62,864
Rams, ewes, and wethers	53,224
Spring lambs	9,640
Value	$486,853
Goats:	
Number	2
Value	$10
POULTRY AND BEES.	
Number of poultry of all kinds	22,981
Value	$16,498
Number of colonies of bees	.....
Value	.....

RAVALLI COUNTY.

Between the high Bitter Root mountain range which forms the western boundary of Montana and an outlying range of the Rocky mountains lies the Bitter Root valley, noted as one of the most wonderful sections of America on account of the salubrity of the climate, the fertility of the soil and the beauty of the scenery. All but about fifteen miles of this valley, which is about 75 miles long and varies in width from a mile or two to fifteen miles or more, is in Ravalli county. On both sides are extensive foothills and benches. From the mountains descend many streams that furnish water for irrigation, and through the length of the valley flows the beautiful Bitter Root river, one of the headwaters of the Columbia river. Protected by mountain ranges the winters are usually mild, the thermometer rarely falling to zero. The summers are delightful; the days are never excessively hot and the nights are always cool. There are many places of rare scenic beauty, mineral springs, excellent trout streams, and places where big game may be found. The first church in Montana was established by Father DeSmet in the Bitter Root valley in 1841; and there the first crops of wheat, oats and potatoes were grown. The first flour and saw mills to be built in what is now the state of Montana were built then under the direction of the Catholic missionaries to the Flathead Indians, the tribe which inhabited the country. Ravalli county was formed from Missoula county in 1893 and was named for Father Ravalli, one of the pioneer priests.

The industries are farming, fruit growing and lumbering. Agriculture in Montana had its beginning in the Bitter Root valley which early attracted settlers who engaged in stock raising and in farming. Hay, wheat and oats made astonishing yields. Marcus Daly, the copper magnate, bought a large tract of land near Hamilton and made it the most highly improved farm in Montana. Good crops have been grown without irrigation on bench lands. The valley lands are irrigated and large yields of all staple crops are harvested every year. Some years ago John F. Wood of Victor threshed 186 bushels and 25 pounds of oats from 31 pounds of seed. E. F. Groff of Corvallis harvested 1,745 bushels of oats from a twelve acre field, an average of over 145 bushels an acre. Large yields of wheat are common, and hay is a great crop, 6,700 cars having been shipped from the county in one year, according to the Ravalli Republican. A new and promising crop is seed peas. The potato rivals the apple as a profit producing crop and appears on menus of dining cars and eastern hotels as the "Big Bitter Root Potato." In the fall of 1912 the Ravalli Mercantile Company of Hamilton received an order from Honolulu for fifty boxes of the extra large Bitter Root potatoes. The potatoes, which average two pounds each in weight, are cleaned, carefully packed, and shipped in crates. Other crates have been shipped to Chicago and New York. From a plat 16x55 feet, Hiram Platt of Como gathered 913 pounds of potatoes, a yield equivalent to 759 bushels to an acre.


MISSOULA
RAVALLI
BEAVERHEAD
GRANITE
IDAHO
Florence
Pyretees
CLEVELAND MT.
9 Mile Cr
Charles Cr
ST JOSEPH PK.
Lacy Cr
Kendall
3 Mile Cr
White Horse Cr
Lion Cr
Ambrose Cr
ST MARYS PK.
Bitterroot River
Stevensville
Burnt
Big Cr
Willoughby Cr
Rosemont
Victor
Bear Cr
Birch Cr
Creek
Fred Burr
Tucker
Woodside
Corvallis
Willow Cr
Mill Cr
Riverside
Upper Big
HAMILTON
Canyon Cr
Sawtooth Cr
Gird Cr
Roaring Lion
Sta.
Grantsdale
Skalkaho
FOX PK.
Weeping Child Cr
Ward
Lost Horse Cr
Como
Rock Cr
Burk Cr
EL CAPITAN
Darby
Conner
Tin Cup Cr
Evelyn
TRAPPER PK
Cameron Cr
East Fk
Sula
CONTINENTAL DIVIDE
WATCH TOWER
Violet Cr
Mineral Cr
Camp Cr
Blue Joint Cr
Alta
ROCK PT.
BLUE NOSE
SCALE IN MILES
10 0 10 20
The Gibson Map Co Denver Colo

Celery, asparagus, tomatoes, peas, cabbage and other vegetables are raised in large quantities and sold in the cities of the state.

From the Census Bulletin, "Statistics of Agriculture—Montana," the following figures are taken:

PRINCIPAL CROPS IN 1910.

Crop.	Acres.	Production. (Bushels)	Crop.	Acres.	Production. (Tons)
Corn.....	101	5,003	Hay and forage total	29,967	52,027
Oats.....	14,317	811,219	Timothy alone	3,425	5,594
Wheat....	6,558	180,304	Timothy and clover mixed....	21,856	37,744
Barley....	1,434	29,154	Alfalfa	1,771	4,090
Rye.	590	7,655	Other tame and cultivated grasses (exclusive of clover alone)	441	583
Flaxseed..	....	.....	Grains cut green	613	768
Dry Peas..	....	5,175	All other hay and forage.....	1,858	3,248
Potatoes..	2,327	386,998			

Ravalli is not a range stock county but has many pure bred horses, cattle and hogs. The Bitter Root Stock Farm at Hamilton was formerly the home of Mr. Daly's stable of famous thoroughbred and standard bred horses and many noted performers on rack tracks were raised there.

The dairy stock is of high grade and the valley has many advantages as a dairying section. One thousand people were present in August, 1911, at the opening of the new creamery at Stevensville which succeeded to one built in 1908. Prof Clark of the Montana Agricultural College said in an address that the Stevensville creamery was a benefit not only to the Bitter Root valley, but to the whole state, because it showed what can and should be done in every county, and he continued:

"The people of Montana are consuming annually 7,460,000 pounds of butter and 2,611,000 pounds of cheese. The people of the state manufacture annually only 2,000,000 pounds of butter and no cheese. This should not be so. We should produce at least all we consume."

In 1912 the Stevensville Cooperative Creamery paid out to dairymen in the locality over $100,000; it received 693,340 pounds of cream and 46,755 pounds of milk, and produced 251,156 pounds of butter. The creamery decided to go into the egg business and will build a cold storage room for the purpose. The poultry products of the county annually amount to a large sum.

Some of the early settlers planted fruit trees which succeeded so well that it became evident that the Bitter Root valley possessed unique advantages as a fruit district, and much credit is due to the early fruit growers whose experiments resulted in building up a great industry. Orchards are found in all parts of the valley and on bench lands that are not suitable for farming. The profits from growing apples are so great that no one can afford to grow grain on lands suitable for orchards. Large capital has been enlisted in developing irrigation and orchard enterprises and much publicity has been given to the attractions and advantages of this section. One of the longest private irrigation canals in the world has been constructed by the Bitter Root Irrigation Company.

Apples are the chief commercial fruit crop, the variety most extensively

grown being the McIntosh Red which reaches perfection in this valley. Hundreds of thousands of trees have been set out in the last three years. In 1910 it was estimated that there were 33,000 acres in fruit trees in Ravalli county. Shipments are in excess of 500 cars a year, of the highest grade in quality and color and commanding fancy prices in New York markets. Montana apples have gained a reputation as the wormless apple, the only apply that one may bite into in the dark with the assurance that here is no danger of biting into a worm. From 130 trees near Hamilton a profit of $1,750 has been realized.- This is an exceptional yield, but a profit of $300 to $500 an acre is not unusual. A fruit buyer visited the apple orchard of Henry Buck near Stevensville in 1911 and estimated that it would yield 12,000 boxes. Mr. Buck said then that he had never received less than $1.75 a box for his apples. "Large, luscious, brilliant, perfect in form and color, not a worm or a blemish in a hundred thousand boxes, they are the most marketable product on earth," has been said of the Bitter Root apples. Cherries, pears, plums, peaches and berries are also very successful. Fruit tracts are usually irrigated, and water has been brought at great expense from distant reservoirs to insure an unfailing supply. For quality of product and profit yielded the orchards of the Bitter Root valley challenge comparison with those in the most famous fruit districts.

The mountains are heavily timbered and lumbering is an important industry. At Hamilton is one of the largest saw mills in the state and there are smaller ones at other places. Ravalli county has also mineral wealth—gold, silver, copper and coal.

Flourishing small towns are close together, the chief ones being Stevensville, Victor, Corvallis, Darby and, Hamilton, the county seat and principal town. Hamilton has city water works, sewers, electric lights, a fine city hall and county court house, three saw mills, one flour and oatmeal mill, an elevator, an evaporator, a creamery, manufactories and desires a beet sugar factory. It has one of the finest hotel buildings in the state, banks, large business establishments, good schools, many churches, two newspapers and is the chief trading point of a rich and growing country.

Stevensville, the next town in population and business importance, has city water works and electric lights, excellent schools, a hospital, six churches, banks, a public library, a newspaper, a creamery and a number of retail stores.

Victor and Corvallis are flourishing towns in the valley surrounded by good fruit and farming districts. Darby, the terminus of the railroad sixteen miles south of Hamilton, is surrounded by a rapidly developing country. Many new orchards have been set out, and it is expected that 1,660 cars will be required to move the fruit crop when they come into bearing. Besides many cars of sheep and cattle, 120 cars of apples were shipped from Darby in 1911.

All parts of the county present excellent opportunities for the home-

seeker to purchase improved or unimproved farms, orchards or fruit lands at prices below their value considered from an investment standpoint, and in many cases on very easy terms.

The area of Ravalli county is 2,447 square miles. The population in 1910 was 11,666. The number of votes cast in 1908 was 2,170 and the voters registered in 1912 were 2,959. Assessed valuations for the last three years were as follows: $5,532,111 in 1910; $6,094,102 in 1911; and $6,290,429 in 1912. At the last assessment real estate and improvements were valued at $4,313,304, and personal property at $1,467,968. Horses of various classes numbered 5,614, valued at $239,727; cattle of all kinds 7,336 head, valued at $138,237; sheep 17,373, valued at $45,524; and hogs of the value of $7,511. The acres of land assessed numbered 375,828, the average valuation being $6.39. One telegraph company had 46 miles of line and three telephone companies 237 miles of wire. The Northern Pacific, the only railroad in the county, had 59 miles of track.

Ravalli county is in the Missoula land district and July 1, 1912, there were 1,000 acres of surveyed and 96,532 acres of unsurveyed, unappropriated public land, all described as mountainous.

The secretaries of Commercial Clubs at Hamilton, Corvallis, Darby, Stevensville and Victor will supply further information about opportunities in Ravalli county, on request.

FARMS AND FARM PROPERTY IN 1910, COMPILED FROM U. S. CENSUS REPORT.

Population	11,666
Population in 1900	7,822
Number of all farms	1,055
Number of all farms in 1900	891
Color and nativity of farmers:	
Native white	835
Foreign-born white	219
Negro and other nonwhite	1
Number of farms, classified by size:	
Under 3 acres	3
3 to 9 acres	52
10 to 19 acres	73
20 to 49 acres	186
50 to 99 acres	180
100 to 174 acres	311
175 to 259 acres	86
260 to 499 acres	111
500 to 999 acres	32
1,000 acres and over	21
LAND AND FARM AREA.	
Approximate land area—acres	1,566,080
Land in farms—acres	209,266
Land in farms in 1900—acres	177,652
Improved land in farms—acres	106,693
Improved land in farms in 1900—acres	81,012
Woodland in farms—acres	46,246
Other unimproved land in farms—acres	56,327
Per cent of land area in farms	13.4
Per cent of farm land improved	51.0
Average acres per farm	198.4
Average improved acres per farm	101.1
VALUE OF FARM PROPERTY.	
All farm property	$18,559,488
All farm property in 1900	$5,244,878
Per cent increase, 1900-1910	253.9
Land	$15,380,236
Land in 1900	$2,888,510

Average values:	
All property per farm	$17,592
Land and buildings per farm	$15,972
Land per acre	$73.50
Land per acre in 1900	$16.26
DOMESTIC ANIMALS. (Farms and ranges)	
Farms reporting domestic animals	1,013
Value of domestic animals	$1,273,420
Cattle:	
Total number	11,843
Dairy cows	3,931
Other cows	2,568
Yearling heifers	1,404
Calves	1,586
Yearling steers and bulls	829
Other steers and bulls	1,525
Value	$348,910
Horses:	
Total number	6,941
Mature horses	5,911
Yearling colts	794
Spring colts	236
Value	$742,078
Mules:	
Total number	220
Mature mules	146
Yearling colts	63
Spring colts	11
Value	$20,340
Asses and Burros:	
Number	22
Value	$3,761
Swine:	
Total number	9,272
Mature hogs	5,713
Spring pigs	3,559
Value	$70,190

Buildings	$1,470,237
Buildings in 1900	$711,630
Implements and machinery	$395,769
Implements, etc., in 1900	$178,130
Domestic animals, poultry, and bees	$1,313,246
Domestic animals, etc., in 1900	$1,466,608
Per cent of value of all property in—	
Land	82.9
Buildings	7.9
Implements and machinery	2.1
Domestic animals, poultry, and bees	7.1

Sheep:	
Total number	21,429
Rams, ewes, and wethers	15,963
Spring lambs	5,466
Value	$87,844
Goats:	
Number	46
Value	$297
POULTRY AND BEES.	
Number of poultry of all kinds	48,910
Value	$35,141
Number of colonies of bees	1,458
Value	$4,685

ROSEBUD COUNTY.

Rosebud county was created in 1901 from a part of Custer county; and in January, 1913, a large area in the western and southern parts was taken by the new county of Big Horn. The map on the opposite page shows the county as it existed before the recent loss of territory.

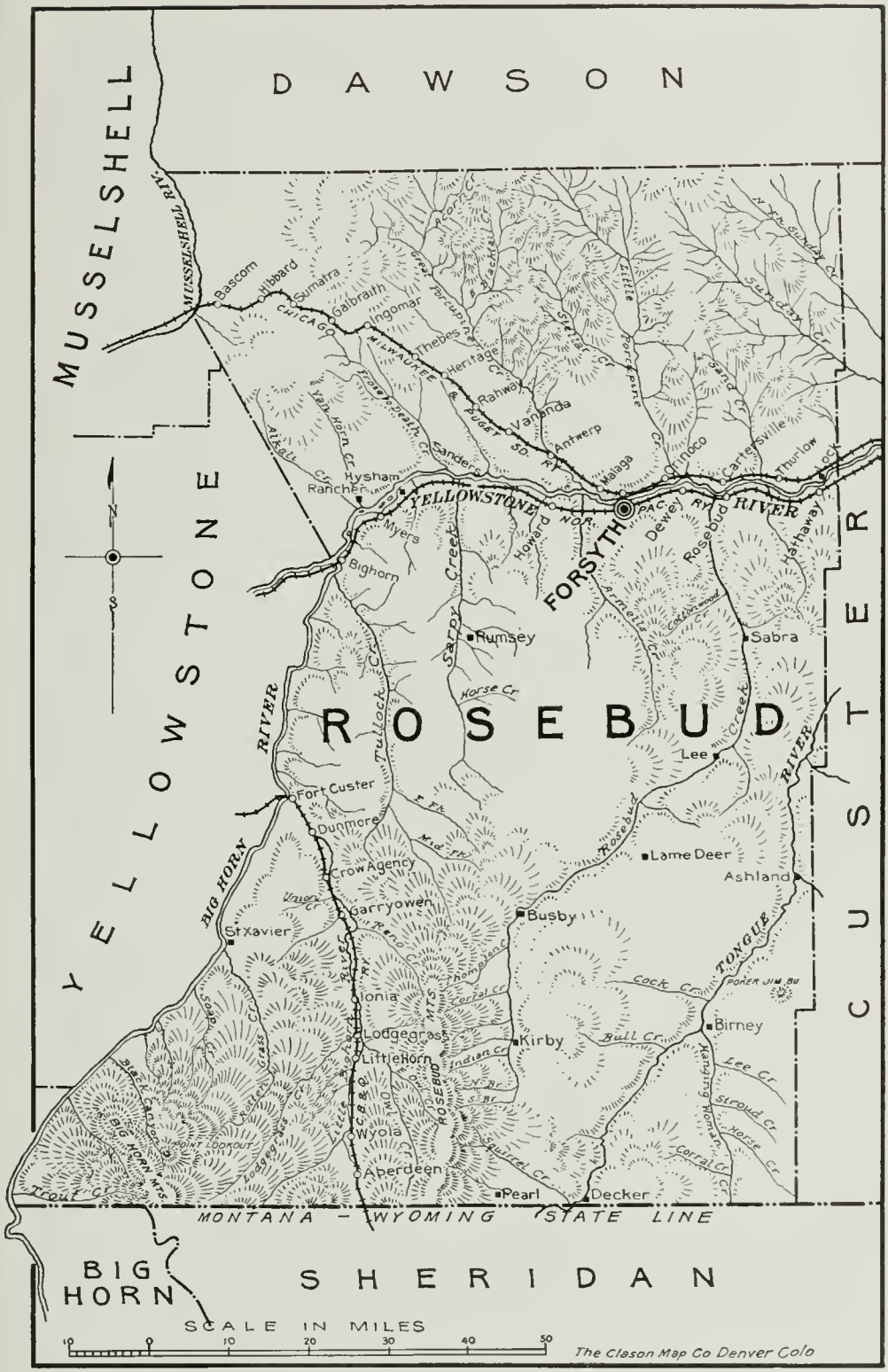
Rosebud is one of the counties in the Yellowstone valley. It has been developing very rapidly in recent years but is still sparsely settled and offers excellent opportunities to homeseekers. Stock growing was almost the only industry when the county was organized and is still a very important one. Large quantities of wool and large numbers of beef cattle are annually shipped.

The county has a great extent of arable lands and the farming industry is rapidly growing in importance. Farm lands are of two kinds, irrigated lands, which are situated in the valleys, and non-irrigated lands, which are situated on the benches and in the foothills. The chief irrigated districts are in the Yellowstone and Rosebud valleys where are produced great yields of alfalfa, sugar beets, wheat, oats, barley, corn and vegetables. In no county in Montana does corn do better, and stalks and ears of surprising size have been exhibited at State Fairs. The productiveness of the soil is strikingly shown by the great yields of vegetables and by the size of specimens. Yields on irrigated farms are about as follows: Wheat, 50 to 60 bushels; oats, 70 to 90 bushels; sugar beets, 18 to 22 tons; alfalfa hay—three cuttings—2 to 6 tons an acre.

Sugar beets are grown quite extensively. The Hysham Echo has the following account of one farmer's beet crop:

> Mr Clark is engaged in the cultivation of sugar beets on his ranch at Sanders having a field of 70 acres under cultivation this season, and which he will soon begin to harvest. This is his second year's experience and he is thoroughly satisfied with the business, having increased his acreage this year considerably more than last. Under present conditions Mr. Clark is obliged to load his beets into cars by hand, causing extra labor and expense, yet he expects to realize $35 per acre clear profit from this season's crop, or a net profit of $2,100 for his year's labor. Mr. Clark's land would probably sell for about $70 an acre at the present time, providing it was for sale, and the net profit of two years' crops of beets would pay for the land. This is about the average experience of Yellowstone valley farmers who have engaged in the beet industry, and is also the cause for the rapid increase of beet sugar growing in this territory. There is scarcely a locality in the United States where the farmers are realizing anything near as large a profit fom their farms as they are here.

The Forsyth Times-Journal printed in its issue of December 26, 1912,


DAWSON
MUSSELSHELL
YELLOWSTONE
CUSTER
ROSEBUD
FORSYTH
BIG HORN
SHERIDAN
MONTANA — WYOMING STATE LINE
MUSSELSHELL RIV.
Bascom
Hibbard
Sumatra
Galbraith
Ingomar
CHICAGO
MILWAUKEE
Thebes
Heritage
Rahway
Vananda
Antwerp
Malaga
Orinoco
Carterville
Thurlow
Hysham
Rancher
YELLOWSTONE
RIVER
Myers
Bighorn
Howard
Sarpy Creek
Rumsey
Sabra
Rosebud Creek
Lee
Fort Custer
Dunmore
Crow Agency
Garryowen
St Xavier
BIG HORN RIVER
Tullock Cr
Horse Cr
Lame Deer
Ashland
Busby
Birney
Kirby
Lodgegrass
Little Horn
Wyola
Aberdeen
Pearl
Decker
TONGUE RIVER
Cook Cr
Bull Cr
Lee Cr
Stroud Cr
Horse Cr
Coral Cr
Squirrel Cr
Trout Cr
Ionia
Indian Cr
Rosebud
Dewey
Roseboud
Arrell Cr
Cottonwood Cr
Yarnaway
Locy
Sander
Aitkell
Van Horn Cr
Porcupine Cr
Little Porcupine Cr
N Fk Sunday Cr
Sunday Cr
Beaucoup Cr
Big Horn Mts
Point Lookout
Lodge Grass Cr
Rotten Grass Cr
Little Big Horn R
Big Horn Canyon
SCALE IN MILES
10 0 10 20 30 40 50
The Clason Map Co Denver Colo

a number of crop reports. Dry land yields per acre were: Wheat, 20 to 36 bushels, in one case only 11 bushels; oats, 50 to 95 bushels; barley, 30 to 70 bushels; corn, 35 to 40 bushels; flax, 20 to 23 bushels; potatoes, 200 to 300 bushels. Yields per acre on irrigated lands were: Wheat, 30 to 45 bushels; oats, 50 to 100 bushels; corn, 25 to 50 bushels. Fifteen to twenty different kinds of vegetables and eight to fifteen different kinds of fruit were successfully grown by the farmers who reported to the newspaper.

The champion crop of flax for the northwest in 1912 is said by the Hysham Echo to have been raised near that town by Jesse Marsh. Of this crop the paper says:

According to separator weight, the city scales, and a third weight in Minneapolis, where the flax was shipped and sold, Mr. Marsh's flax yielded 24 bushels per acre. The field was also accurately surveyed to ascertain its demensions and was found to fall a fraction short of 100 acres and the total weight yield was a trifle more than 2,400 bushels. The total crop was shipped to the Minneapolis market and sold for $1.80 per bushel.

There is another remarkable thing about this crop of flax and that is it was grown without irrigation on dry land. This is perhaps more remarkable than the bumper yield, in as much as it will be the means of "curing" a good many skeptics and pessimists who look with disfavor and are constantly discouraging dry land farming.

It may also be interesting to readers of the Echo to know something about the land upon which this remarkable crop of flax was grown. It is just common Rosebud county dirt. Five years ago it was Crow reservation and never was touched with a plow until last year when Mr. Marsh turned over the sod with his steam outfit. He farmed the land in the ordinary way, by discing, harrowing and packing. None of the work was of a nature that could not be done by any other farmer with a good outfit and the knowledge of farming. The success of the crop therefore must be credited to the richness of the soil and the thorough cultivation, and while this land is perceptibly no different than thousands of acres in this territory the success Mr. Marsh has obtained will be an inspiration to many other farmers to grow flax another season.

The net profit on this crop is said to have been $2,938.

A number of large irrigating canals have been constructed in the Yellowstone valley and others are planned. Very fertile lands near railroad lines and with ample water rights are on sale at low figures for irrigated lands of such fertility. The county is very large, is in an early stage of development, and little publicity has been given to its many advantages.

From the Census Bulletin, "Statistics of Agriculture—Montana," the following figures are taken:

PRINCIPAL CROPS IN 1910.

Crop.	Acres.	Production. (Bushels)	Crop.	Acres.	Production. (Tons)
Corn.....	754	20,276	Hay and forage total	27,359	41,906
Oats.....	4,522	131,744	Timothy alone	297	518
Wheat....	3,512	54,838	Timothy and clover mixed....	.....	.....
Barley....	667	10,967	Alfalfa	11,382	23,720
Rye.....	28	875	Other tame and cultivated grasses (exclusive of clover alone)	699	926
Flaxseed..	....	.....	Grains cut green	792	1,139
Dry Peas..	....	.....	All other hay and forage.....	14,189	15,603
Potatoes..	722	74,757			

A large part of the Crow Indian reservation was in Rosebud county previous to the creation of Big Horn county in which it is now included together with a part of the Northern Cheyenne reservation. The agency and part of the latter reservation remains in Rosebud county.

The Northern Pacific railroad follows the south bank of the Yellowstone river from the eastern to the western boundary of the county. The Chicago, Milwaukee and Puget Sound railroad runs along the north bank from the eastern boundary to Forsyth, at which place it turns to the northwest, passes through the northwestern part of Rosebud county and enters the Musselshell valley at the boundary line between Musselshell and Rosebud counties.

The principal town is Forsyth, the county seat, which is located on both railroads, and in population and business is the most important town in the large extent of country between Billings and Miles City. Forsyth is a progressive place, has good schools, several churches, a public reading room and gymnasium, municipally owned water works, a sewer system, cement sidewalks, electric lights, telephones, a newspaper, banks, hotels, business houses and attractive residences. The railroads employ a considerable number of men, and from Forsyth are shipped large quantities of wool and live stock. It is the trading point for an extensive and developing agricultural section.

Other towns on the Northern Pacific railroad are Rosebud, which is a thriving town and trading point for a large territory on both sides of the Yellowstone river and for the country drained by the Rosebud river, and Hysham in the western part of the county which is surrounded by a very productive country and is a progressive and growing town.

The towns on the Milwaukee are all young, but have made substantial growths in the last four years. Cartersville is in an irrigated section that produces wonderful crops and has a trade which extends to the unirrigated districts north and south of it. Many new settlers have come into this part of the county, and Bascom, Sumatra and Ingomar are among the promising towns. Much live stock is shipped from stations along this line and from them depart homeseekers who are filling up the country to the north.

The creation of Big Horn county has lessened the area, population and wealth of Rosebud county. Before the county was divided the area was 9,663 square miles; the population in 1900 was 7,985; the votes cast in 1908 were 780 and the voters registered in 1912 numbered 1,636.

Assessed valuations for the last three years were: $9,987,091 in 1910; $10,990,110 in 1911; and $11,930,237 in 1912. At the last assessment real estate and improvements were valued at $4,786,880, and personal property at $3,669,120. Horses of various classes numbered 12,447, valued at $604,445; cattle of all kinds 81,828 head, valued at $1,713,558; sheep 325,774, valued at $656,287; and hogs of the value of $3,042. The acres of land assessed numbered 1,354,422, the average valuation being $2.85. Three telegraph companies had 218 miles of line and three telephone

companies 196 miles of wire. The Northern Pacific railroad had 89 miles of track and the Chicago, Milwaukee and Puget Sound 65 miles, a total of 154 miles.

In Rosebud county on July 1, 1912, there were 86,683 acres of surveyed and 40,000 acres of unsurveyed, unappropriated public land within the Billings land district; 40,020 acres of surveyed and 61,490 acres of unsurveyed, unappropriated public land within the Lewistown land district; and 957,440 acres of surveyed and 352,000 acres of unsurveyed, unappropriated public land within the Miles City land district—a total of 1,537,633 acres of unreserved and unappropriated public land in Rosebud county, as constituted at that time.

The secretary of the Commercial Club at Forsyth will furnish further information upon opportunities in Rosebud county, on request.

FARMS AND FARM PROPERTY IN 1910, COMPILED FROM U. S. CENSUS REPORT.

Population	7,985
Population in 1900	.....
Number of all farms	961
Number of all farms in 1900	.....
Color and nativity of farmers:	
Native white	523
Foreign-born white	118
Negro and other nonwhite	320
Number of farms, classified by size:	
Under 3 acres	28
3 to 9 acres	....
10 to 19 acres	....
20 to 49 acres	11
50 to 99 acres	44
100 to 174 acres	564
175 to 259 acres	51
260 to 499 acres	141
500 to 999 acres	54
1,000 acres and over	68
LAND AND FARM AREA.	
Approximate land area—acres	6,184,320
Land in farms—acres	900,810
Land in farms in 1900—acres	.....
Improved land in farms—acres	53,867
Improved land in farms in 1900—acres	.....
Woodland in farms—acres	20,805
Other unimproved land in farms—acres	826,138
Per cent of land area in farms	14.6
Per cent of farm land improved	6.0
Average acres per farm	937.4
Average improved acres per farm	56.1
VALUE OF FARM PROPERTY.	
All farm property	$13,126,908
All farm property in 1900	.....
Per cent increase, 1900-1910	.....
Land	$6,685,399
Land in 1900	.....
Buildings	$629,636
Buildings in 1900	.....
Implements and machinery	$288,566
Implements, etc., in 1900	.....
Domestic animals, poultry, and bees	$5,523,307
Domestic animals, etc., in 1900	.....
Per cent of value of all property in—	
Land	50.9
Buildings	4.8
Implements and machinery	2.2
Domestic animals, poultry, and bees	42.1
Average values:	
All property per farm	$13,660
Land and buildings per farm	$7,612
Land per acre	$7.42
Land per acre in 1900	.....
DOMESTIC ANIMALS. (Farms and ranges)	
Farms reporting domestic animals	885
Value of domestic animals	$5,509,573
Cattle:	
Total number	74,198
Dairy cows	1,691
Other cows	24,444
Yearling heifers	6,093
Calves	5,810
Yearling steers and bulls	5,681
Other steers and bulls	15,738
Value	$2,284,194
Horses:	
Total number	19,409
Mature horses	15,434
Yearling colts	2,867
Spring colts	1,967
Value	$1,090,035
Mules:	
Total number	112
Mature mules	78
Yearling colts	26
Spring colts	8
Value	$12,290
Asses and Burros:	
Number	1
Value	$600
Swine:	
Total number	1,466
Mature hogs	886
Spring pigs	580
Value	$14,545
Sheep:	
Total number	369,681
Rams, ewes, and wethers	365,424
Spring lambs	4,257
Value	$2,106,498
Goats:	
Number	311
Value	$1,411
POULTRY AND BEES.	
Number of poultry of all kinds	20,832
Value	$12,264
Number of colonies of bees	221
Value	$1,470

SANDERS COUNTY.

Sanders county embraces the country lying north of Missoula and south of Lincoln and Flathead counties adjacent to Idaho. It was created in 1906 from a part of Missoula county and named for Wilbur F. Sanders, who was a distinguished pioneer. It embraces about 2,000,000 acres, 01 which 500,000 are agricultural and 1,500,000 acres grazing, timbered, and mountainous.

The industries are farming, fruit growing, stock raising, lumbering and mining. The chief agricultural districts are in the Clark's Fork valley near the towns of Plains, Paradise and Thompson Falls. Back from the valley on the benches on both sides are farms and fruit tracts. In the Little Bitter Root and Flathead valleys and on Camas Prairie, in the recently ceded Flathead reservation, great agricultural development has taken place and this fertile section will produce great quantities of grain when a railroad is built into it.

Sanders county has a fertile soil, and any crop that grows anywhere in the state makes large yields. The rainfall, about 18 inches annually, most of which falls during the growing season, as a rule provides sufficient moisture for crops, although Clark's Fork river and its tributaries provide an abundant water supply for irrigating purposes. The area now under irrigation is being increased, and excellent opportunities exist for capitalists to undertake large irrigation projects. To its fertile soil, Sanders county adds the advantage of a mild climate and a low altitude, the elevation at Heron being only 2,256 feet. The mountains surrounding the valleys afford protection; and because the springs come earlier and the summers last longer than in other parts of the state, varieties of fruits and vegetables thrive that do not succeed where conditions are different.

The soil in the bottom lands is usually a fine, deep, sandy loam, while on the bench lands a rich gravelly loam is found. Frequent yields per acre are from 2 to 4 tons of timothy, 4 to 5 of red clover and 3 to 6 of alfalfa; 40 to 50 bushels of wheat, 60 to 100 bushels of oats, 60 to 70 bushels of barley, 600 bushels of potatoes, and vegetables and fruits in proportion. No finer strawberries are grown anywhere, and they find a ready sale in the mining camps. The agricultural products are sold in all the large cities of the state, but the principal market is in the mining camps of the Coeur d'Alene country, lying immediately south, with which there is a direct railroad connection by way of the Coeur d'Alene branch of the Northern Pacific.

Wheat, oats, barley, flax and hay are the principal crops and the yields per acre are large. Charles Hammons of Plains valley threshed 43½ bushels of wheat to the acre. H. C. Duncan had a wheat crop of 40 bushels to the acre and tells of a crop grown by H. J. Waylett in the Little Bitter Root Valley, on lands supposed to be of little value, that yielded 70 bushels to the acre. The Sanders County Signal claims the potato championship of Montana for Joseph Margeau, who brought to the editor five potatoes that weighed fifteen pounds. Mrs. W. F. Bemis of Thompson Falls had

LINCOLN
FLATHEAD
SANDERS
MISSOULA
IDAHO
CABINET MTS
COEUR D'ALENE MTS.
THOMPSON
Belknap
White Pine
Camas
Camas Prairie
Greenspring
Plains
Paradise
Quinn
Dixon
Flathead
Perma
Heron
Noxon
Smeads
Trout Cr.
Hylen P.O.
Vermilion
Beaver P.O.
Whitepine Cr.
Beaver Cr.
Lit. Beaver Cr.
Clear Cr.
Prospect Cr.
Wilson Cr.
Squaw Cr.
Mosquito Cr.
Thompson River
Lit. Thompson R.
Lower Thompson
Bitter Root River
Lower Flathead R.
Clark Fork of the Columbia
Cedar
Buffalo Run
NORTHERN PACIFIC RY.
Bull River
Roth Cr.
Dry Cr.
Swamp Cr.
Stephens Cr.
Big Ann Cr.
Fir Cr.
BLACK PK.
DIXIE PK.
SCALE IN MILES
10 0 10 20
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ripe potatoes as early as June 23. From a patch of potatoes at Plains, Fred Lapointe harvested a crop averaging 640 bushels to the acre on unirrigated ground. There is a good market for vegetables which mature early and make large yields. E. R. Rowan, who lives on a claim near Dixon, raised a fine crop of watermelons some of which weighed 20 pounds. On a farm near Plains C. C. Biggs harvested about one thousand crates of tomatoes from one acre, and he has also succeeded in growing tobacco. No better corn, it is said, is grown anywhere.

From the Census Bulletin, "Statistics of Agriculture—Montana," the following figures are taken:

PRINCIPAL CROPS IN 1910.

Crop.	Acres.	Production. (Bushels)	Crop.	Acres.	Production. (Tons)
Corn.....	36	985	Hay and forage total	4,386	7,529
Oats.....	1,746	70,825	Timothy alone	677	1,003
Wheat....	1,785	59,552	Timothy and clover mixed....	2,376	4,510
Barley....	150	4,401	Alfalfa	222	436
Rye	....	.....	Other tame and cultivated grasses (exclusive of clover alone)	110	95
Flaxseed..	....	.....	Grains cut green	727	1,160
Dry Peas..	....	22	All other hay and forage.....	274	325
Potatoes..	230	30,782			

The fruit growing possibilities of numerous districts in this county are almost limitless. Apples, peaches, pears, cherries, apricots and berries thrive in one or more of them, and some of the best orchards in Montana are in the Plains valley.

The conditions of fruit growing are substantially similar to those in the Bitter Root and Missoula valleys; the Northern Spy, the Baldwin, the Spitzenberg apple grow to perfection; and no finer specimens of the famous McIntosh Red can be found anywhere than are produced in the Plains valley. All other kinds of fruit grow in profusion in all the valleys of the county, and each succeeding year sees new orchards started. Sanders county promises to become one of the chief fruit producing counties of the northwest.

The county is well adapted to dairying and poultry raising, both of which bring large and certain returns.

The mountains, which cover about three-fourths of the area of the county, are covered with billions of feet of pine, fir, spruce, tamarack and cedar, and lumbering has been a leading industry since the Northern Pacific railway was built through it in 1883. There are many saw mills and the lumber companies pay out large sums for wages. Much of the timbered land, when cleared, will make the finest kind of farming land.

Sanders county adjoins the famous Coeur d'Alene mineral district and has a similar geological formation. Around Trout Creek and White Pine sufficient work has been done to show the existence of rich deposits of lead, silver and copper, and throughout the mountain districts are mineral claims that promise to develop into mines. The mineral districts of Sanders county need capital for their development and promise splendid returns for investments in mining properties.

The Camas Hot Springs on the Flathead reservation, which have been reserved by the government on account of their wonderful curative qualities as a resort for invalids, may become a rival to the Hot Springs of Arkansas. Near Paradise are Quinn's Hot Springs, a favorite place of resort that has good accommodations.

Large sums have been spent in the last three years in improving highways and in constructing at Plains and Thompson Falls very long and expensive bridges across Clark's Fork river which afford communication to farming and fruit districts near those towns.

A valuable asset is the great water power of Clark's Fork river and of tributary streams. By constructing a 25 foot dam at Thompson Falls it will be possible, it is said, to generate 60,000 horse power. A large company is now developing this power and $400,000 has been set aside for work on it. The plan is to develop 46,000 horse power and the work is well under way. An auxiliary plant on Prospect creek, which is to furnish power for the erection of the big dam on the river, electric lights for Thompson Falls, Plains, Paradise, St. Regis and the mines at Iron Mountain, is nearly completed.

It is said that in the vicinity of Thompson are 60,000 acres of good fruit land; and an irrigation project is in process of construction to bring water on a part of these lands. The plan is to divide the holdings of the company into tracts of from 10 to 60 acres and to sell them as fruit tracts. Fruits thrive in this vicinity, and it is expected that the completion of this project will lead to the coming of many settlers into the district and to the planting of a large acreage of orchards. At Plains, also, fruit lands have been placed on sale in small lots. Opportunities are numerous to buy farm lands, orchards or fruit lands at low prices.

Plains, in the productive Plains valley and the trading point for the western part of the Flathead reservation, is the chief town. It has a water works system, electric lights, an elevator, a public school building which cost $25,000, four churches, banks, newspaper, numerous business houses which have spent much money on permanent improvements, and many new buildings have been recently erected.

Thompson Falls, the county seat, a growing town in a rich, undeveloped district, has two public schools and a high school, a hospital, a church, a newspaper, a bank, hotels, stores, and a fine system of water works.

Paradise is the railroad point where are a large railroad roundhouse and a tie preserving plant. A large sum is paid to the numerous railroad employes. Camas is a new town in the reservation that has grown up around the springs and promises to become an important place. The springs attract visitors to the town which is a trading point for a country that has recently been settled. It has hotels, business houses, a bank and a newspaper.

Dixon, a growing town situated on the Northern Pacific railroad where the Flathead river empties into Clark's Fork, is the trading point for a good farming country, is connected by auto stages with towns north of it,

and is the port of a steamboat that runs on Flathead river. The town has mercantile establishments, a bank, a newspaper, hotels, and expects to be the southern terminus of a railroad to be constructed through the reservation.

The area of Sanders county is about 2,859 square miles. The population in 1910 was 3,713; the votes cast in 1908 were 867 and the voters registered in 1912 numbered 1,620.

Assessed valuations for the last three years were: $4,406,895 in 1910; $4,816,308 in 1911; and $5,061,473 in 1912. At the last assessment real estate and improvements were valued at $1,786,986, and personal property at $632,260. Horses of various classes numbered 1,980, valued at $90,290; cattle of all kinds 4,232 head, valued at $81,203; sheep 26, valued at $55, and hogs of the value of $1,428. The acres of land assessed numbered 392,673, the average valuation being $2.98 per acre. Two telegraph companies had 130 miles of line and one telephone company 60 miles of wire. The Northern Pacific, which is the only railroad company operating in the county, had 177 miles of track.

July 1, 1912, there were in Sanders county 43,556 acres of surveyed, unappropriated public land in the Kalispell land district, and 13,554 acres of surveyed and 13,890 acres of unsurveyed, unappropriated public land in the Missoula land district. Some tracts subject to entry under the special act under which the Flathead Indian reservation was opened have not been filed on and information concerning them may be had at the Missoula and Kalispell land offices.

Secretaries of the Commercial Clubs at Camas, Dixon, Heron, Paradise, Plains and Thompson Falls will supply information about opportunities in Sanders county, on request.

FARMS AND FARM PROPERTY IN 1910, COMPILED FROM U. S. CENSUS REPORT.

Population	3,713
Population in 1900	....
Number of all farms	211
Number of all farms in 1900	....
Color and nativity of farmers:	
Native white	161
Foreign-born white	49
Negro and other nonwhite	1
Number of farms, classified by size:	
Under 3 acres	1
3 to 9 acres	5
10 to 19 acres	2
20 to 49 acres	8
50 to 99 acres	22
100 to 174 acres	93
175 to 259 acres	24
260 to 499 acres	33
500 to 999 acres	17
1,000 acres and over	6
LAND AND FARM AREA.	
Approximate land area—acres	1,829,760
Land in farms—acres	55,917
Land in farms in 1900—acres	....
Improved land in farms—acres	12,421
Improved land in farms in 1900—acres	....
Woodland in farms—acres	21,078
Other unimproved land in farms—acres	22,418
Per cent of land area in farms	3.1

Average values:	
All property per farm	$10,174
Land and buildings per farm	$8,723
Land per acre	$28.61
Land per acre in 1900	....
DOMESTIC ANIMALS. (Farms and ranges)	
Farms reporting domestic animals	199
Value of domestic animals	$234,643
Cattle:	
Total number	2,100
Dairy cows	537
Other cows	611
Yearling heifers	286
Calves	300
Yearling steers and bulls	177
Other steers and bulls	189
Value	$66,304
Horses:	
Total number	1,357
Mature horses	1,125
Yearling colts	169
Spring colts	63
Value	$151,405
Mules:	
Total number	53
Mature mules	30
Yearling colts	16
Spring colts	7
Value	$5,445

Per cent of farm land improved..	22.2
Averages acres per farm	265.0
Average improved acres per farm	58.9
VALUE OF FARM PROPERTY.	
All farm property	$2,146,706
All farm property in 1900	....
Per cent increase, 1900–1910...	....
Land	$1,599,860
Land in 1900	....
Buildings	$240,000
Buildings in 1900	....
Implements and machinery	$64,920
Implements, etc., in 1900	....
Domestic animals, poultry, and bees	$241,306
Domestic animals, etc., in 1900	....
Per cent of value of all property in—	
Land	74.5
Buildings	11.2
Implements and machinery	3.0
Domestic animals, poultry, and bees	11.2

Asses and Burros:	
Number	1
Value	$500
Swine:	
Total number	1,044
Mature hogs	605
Spring pigs	439
Value	$10,594
Sheep:	
Total number	22
Rams, ewes, and wethers ...	14
Spring lambs	8
Value	$395
Goats:	
Number	....
Value	....
POULTRY AND BEES.	
Number of poultry of all kinds	8,724
Value	$6,345
Number of colonies of bees	55
Value	$318

SILVER BOW COUNTY.

Silver Bow, the richest and most populous county of Montana, is also the smallest, having an area of only 698 square miles. It is the only county of the first class, and includes Butte, the principal city of Montana, whose population is more than double that of any other city in the state. The population of the county is nearly all in Butte or in the contiguous suburbs that are practically but not legally parts of the city. The population of the city of Butte in 1910 was 39,165 and of Walkerville 2,491. Thickly settled communities that are not incorporated adjoin both cities. The population of the county was 23,744 in 1890; 47,635 in 1900, and 56,848 in 1910. Butte had 10,723 inhabitants in 1890; 30,470 in 1900, and 39,165 in 1910.

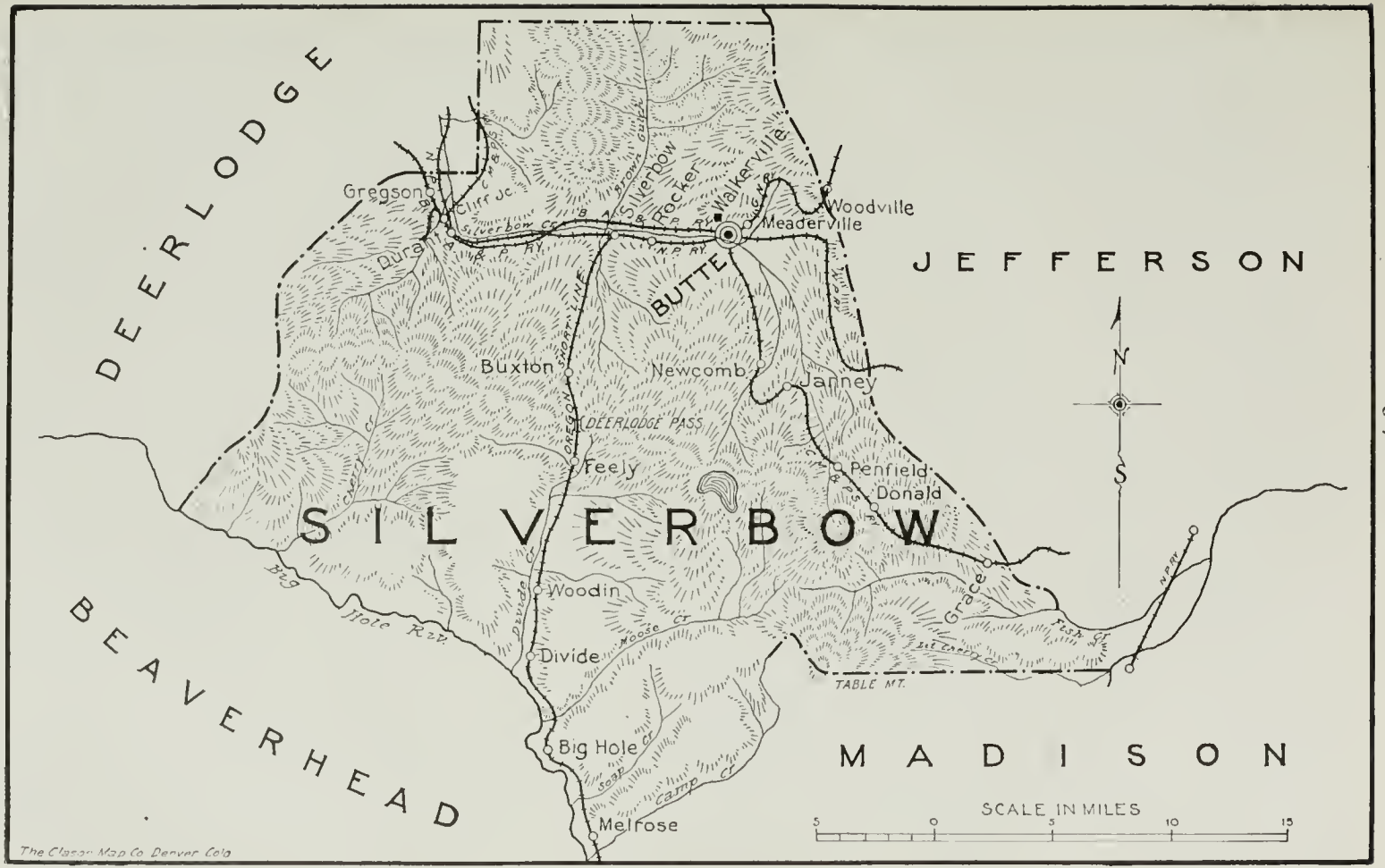
The county was created February 16, 1881, and derives its importance and prosperity from the wonderful copper mines which are worked on an enormous scale. There are dairies and vegetable gardens and considerable poultry products are raised, but the area devoted to farming is small and the farming industry will always be subordinate.

From the Census Bulletin, "Statistics of Agriculture—Montana," the following figures are taken:

PRINCIPAL CROPS IN 1910.

Crop.	Acres.	Production. (Bushels)	Crop.	Acres.	Production. (Tons)
Corn.....	....	.....	Hay and forage, total	7,428	10,791
Oats.....	439	19,644	Timothy alone	1,298	2,318
Wheat....	90	1,811	Timothy and clover mixed....	943	1,678
Barley....	37	1,143	Alfalfa	328	783
Rye.....	57	747	Other tame and cultivated grasses (exclusive of clover alone)	215	351
Flaxseed..	....	.....			
Dry Peas..	....	.....			
Potatoes..	62	6,903	Grains cut green	1,073	1,624
			All other hay and forage.....	3,571	4,037

All the copper that has been produced in Montana has come from the mines of Butte except a relatively small amount. A great part of the silver and gold has also been produced there as by-products of copper mining. The zinc production of the state is also from Butte ores. In


DEERLODGE
JEFFERSON
BEAVERHEAD
MADISON
SILVERBOW
BUTTE
Gregson
Cliff Jc.
Silverbow
Tracker
Walkerville
Woodville
Meaderville
Buxton
Newcomb
Janney
DEERLODGE PASS
Feely
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view of these facts some idea of the enormous wealth that the mines of Butte have produced and are yearly turning out may be formed by considering the table of the production of minerals in Montana which is printed on another page. The Butte mining district is the most productive area of its size in the world, and the mining, handling and treating of ores are conducted by the most modern methods. In no mining district is labor better paid. The miners in the Butte district receive in wages about $1,250,000 a month; and, in addition, the mines support an army of smeltermen, railroadmen, mechanics and others. The combined pay rolls make Butte the greatest wage-receiving city of its population in the world.

New mineral ground is opened up every year and the old mines show no signs of exhaustion. The output has varied owing to market conditions, the production ranging from 275,000,000 to 312,000,000 pounds in the last three years, but is usually large enough to put Montana in the first or second place in copper production, and added to silver mined elsewhere in the state, first in the production of silver. Butte's mineral output approximates 30 per cent of the copper mined in the United States, 25 per cent of the copper produced in North America, 17 per cent of the copper production of the world. More silver is mined than any other district in America. The mines consume annually about 65,000,000 feet of timber, 225,000 stulls, and contain one billion feet of timber. They use 4,000,000 pounds of giant powder every twelve months. The underground workings of the mines aggregate over 900 miles. The deepest shaft is 2,900 feet. There is sufficient ore blocked out to run many of the great mines at their present capacity for many years without further development, but vast sums are spent annually in sinking, prospecting and other work, and constant improvements are being made to secure greater efficiency in operation.

Of the work done in 1911, the State Mine Inspector says in his report:

In no year in the history of the Butte district has so much work in the nature of development been done as during the past 12 months. A vast territory to the north of the copper zone has been explored and has proven to carry extensive ore bodies in copper, silver, gold and a large percentage of zinc. The development exceeded by 50 per cent even the large amount of work that was done some four or five years ago during the height of the copper boom, when a score of new companies were engaged in the work of developing new mines. At that time less work of this character was done by the large companies. The past year the small and numerous new companies were entirely out of it, with the exception of a few, and the work was confined to the large companies, which are doing extensive development on the several properties controlled by them. A great change has taken place in Silver Bow county by electricity taking the place of steam, which will in the future add to the life of the camp at least 20 years, by cheapening the cost of production by which low grade ores are being mined at a profit, which otherwise would remain untouched at the present system of mining. While it is impossible for even an estimate of a reliable character to be given of the cost of production until after electricity has entirely taken the place of steam, it has been estimated that there will be a reduction in the cost of production of one cent per pound of copper produced.

Of mining activity in 1912, the Deputy State Mine Inspector, under date of December 1, says:

"In the beginning of the year 1912, production was somewhat curtailed owing to the low price of copper, but within the last eight months they have been running steadily, just doing necessary improvements. It has principally consisted of changing hoisting engines from steam to air, but when one mine or two closed on account of this change, production was increased in others to make up for those closed, making the production nearly normal, which is about 15,000 tons per day, and giving employment to over 12,000 men, which represents over $1,500,000 pay roll per month of real money to be distributed to all classes, business people in Butte and the state in general. The largest amount of money paid for the number of men employed in the world.

The Butte Miner of December 15, 1912, says:

During the year the mines of Butte produced about 325,000,000 pounds of blister copper, or more than 25 per cent of the world's supply, the copper alone producing a revenue of $57,687,500. The gold and silver in the copper has a value of $8,125,000, making the gross output of the copper mines at Butte $65.812,50. The market value of the zinc product of the camp during the year amounted to close to $5,000,000. It is conservatively estimated that the zinc output for the coming year will exceed $20,000,000 in gross value.

By the mining companies operating in Butte at the present time there are employed on the surfaces and underground, approximately 12,000 men. The average wage scale is $4 per day for miners and muckers, while surface men receive an average of $3.50 per day. The payroll of Butte amounts to more than $1,500,000 a month, exclusive of the wages paid to those employed in industrial and mercantile pursuits.

The Mining World of Chicago has recently published the following:

"Since 1880, when the Anaconda mine was opened as a silver property but quickly developed into a copper producer, the mines of Butte have yielded an estimated total of 7,000,000,000 pounds of copper, having a gross value of $980,000,000, based on an average price of 14 cents per pound The Butte ores carry 2½ cents in silver and gold for each pound of copper, giving a value of gold and silver to the copper ores mined since 1880 of $175,000,000, and a total value in copper, silver and gold of $1,155,000,000.

"In 1912 the Butte mines produced 321,115,170 pounds of copper against 270,987,699 in 1911, 278.715,536 in 1910, 306,147,616 in 1909, and 268.272,420 in 1908. While the copper production of 1912 marked a new high record a greater reserve was created than was known in the Butte mines in years.

The Anaconda Copper Company employed last year 7,339 miners, 1,699 surface men, a total of 9,038 men at the mines, and other companies employed about 3,175 men, a total of 12,213.

Development of old properties went steadily forward and there was much activity during the year in developing mining claims and properties owned by the smaller companies. The concentrator of the Butte and Superior Company, which is expected to handle when in complete working order 2,500 tons of zinc ore a day, was completed. The Butte Central Company built a concentrator to treat 150 tons of silver-lead-gold ore a day; and Hon. W. A. Clark has begun to build a concentrator that will treat the zinc ores from the Elm Orlu mine. Of particular interest is the experiment that has been made at the leaching plant put up by the Bullwhacker Mining Company to extract the copper metal directly from copper ores without going through the process of smelting. Copper has been shipped from this plant, and if the process should prove an economic

success it may be the means of largely increasing the copper production of the state.

Although a considerable quantity of copper ore is treated at the Pittsmont smelter of the East Butte Company by far the greater part of the ores mined in Butte are smelted at Anaconda and Great Falls. In 1911 the Anaconda Company completed the building in Butte of the Washoe Sampling Works, one of the largest and most perfectly equipped structures of its kind in the world. The main portion of the plant is 100 feet long, 60 feet wide and 80 feet in height. It has four floors, beside the pit, and has a capacity for handling 500 tons of ore every eight hours.

Butte, which has been known as "the Greatest Mining Camp on Earth," is much more than that; it is the most populous city in the northwest in the great extent of country that lies between Minneapolis and Spokane; and apart from its unequalled mining interests it an important financial, railroad, commercial and distributing center. Years ago it emerged from the mining camp stage of existence and is a modern, progressive, permanent, well built, growing city that is, nevertheless, a strong, rugged, unique town different from any other place in the world.

The price of copper metal and shares of copper mining companies vary from month to month, but the Butte mines go on producing. The chief difference is in the size of the dividends distributed; the pay roll is always working; and "Butte," it has been said, "eats as regularly and as often one year as another. It is a town where money circulates."

Butte is a railroad center. Transportation facilities are provided by the Northern Pacific railroad, which has branches connecting with the mining districts of Madison county; the Chicago, Milwaukee and Puget Sound railroad, the Great Northern, the Oregon Short Line, and the Butte, Anaconda and Pacific. Butte is the terminus of the two last named roads, and of the Montana Central division of the Great Northern which extends by way of Helena and Great Falls to Havre and which is about to build a fine, large railroad station. A survey has been made for an electric railway to Helena, a direct line to the Bitter Root valley is talked of, and a company to build a line from Butte to Boise has been incorporated. No other city in the world of like population shows such a railroad tonnage. Tables compiled four years ago showed that 16,000 cars of freight either originate in or are received in Butte each month, more than 1,000 cars containing merchandise. Over steam roads Butte handles annually about 17,280,000,000 tons of freight, most of it ore, enough to make 5,485 trains of 35 cars each. For every hour of every day, through every week of the month and every month of the year, Butte pays more than than $1,000 to railroads for freight, or $24,000 daily, or $9,000,000 annually. There is annually paid out in Butte to railroad employes about $1,000,000. The Milwaukee Railroad Company is preparing to build a comodious and costly station at Butte and has recently been engaged in extending its line through Silver Bow canyon, a difficult and expensive piece of railroad construction.

Butte is an important distributing point for a large part of Montana and Idaho, and has manufactures of many kinds "from macaroni to mattresses, from candy to coffins and an infinite variety between."

Butte has many strong financial institutions; and business blocks, commercial establishments, newspapers, public schools, parochial schools and churches that rival those to be found in cities many times larger. It is the seat of the State School of Mines, has a fine federal building, and the county of Silver Bow has recently completed at a cost of a million dollars one of the best county buildings in the United States. Columbia Gardens is a beautiful pleasure ground and place of resort. Butte is an agreeable place of residence and has many handsome private dwellings.

Butte is a city of consumers whose needs make a local market for much of the vegetables, beef, mutton, poultry, eggs, butter, fruit and flour that Montana produces and great quantities of hay and grain are sold there for horse feed. Butte is unique and offers many attractive points of interest to the tourist. It is a place where many fortunes have been made and where others may yet be made.

The population of Silver Bow county was 56,848 in 1910, the number of votes cast in 1908 was 13,276, and the number of voters registered in 1912 was 18,554.

Assessed valuations for the last three years were as follows: $36,880,475 in 1910; $36,705,161 in 1911; and $42,635,982 in 1912. The mines are not included in the valuations. At the last assessment real estate and improvements were valued at $19,771,700 and personal property at $20,994,495. Horses of various classes numbered 3,337, valued at $159,435; cattle of all kinds 3,952 head, valued at $95,975; sheep 11,040, valued at $22,100, and hogs of the value of $3,510. The acres of land assessed numbered 107,488, the average valuation being $3.81 an acre. City and town lots were valued at $8,707,340, buildings and other improvements at $8,910,095, and improvements on mining claims $943,825. Five telegraph companies had 816 miles of line and five telephone companies 1,411 miles of wire. Five railroad companies had 232 miles of track. Silver Bow county is in the Helena land district, and July 1, 1912, there were 80,629 acres of surveyed and 16,299 acres of unsurveyed, unappropriated public land.

Further information about opportunities in Silver Bow county will be furnished by the secretary of the Butte Chamber of Commerce, on request.

FARMS AND FARM PROPERTY IN 1910, COMPILED FROM U. S. CENSUS REPORT.

Population	56,848	Average values:	
Population in 1900	47,635	All property per farm	$7,070
		Land and buildings per farm	$4,733
Number of all farms	230	Land per acre	$15.41
Number of all farms in 1900	215	Land per acre in 1900	$9.09
Color and nativity of farmers:		DOMESTIC ANIMALS. (Farms and ranges)	
Native white	96	Farms reporting domestic animals	227
Foreign-born white	131	Value of domestic animals	$448,697
Negro and other nonwhite	3		
Number of farms, classified by size:		Cattle:	
Under 3 acres	16	Total number	7,020
3 to 9 acres	4	Dairy cows	2,651
10 to 19 acres	7	Other cows	1,742
		Yearling heifers	1,057

20 to 49 acres	11
50 to 99 acres	16
100 to 174 acres	96
175 to 259 acres	15
260 to 499 acres	42
500 to 999 acres	14
1,000 acres and over	9

LAND AND FARM AREA.	
Approximate land area—acres	446,720
Land in farms—acres	54,592
Land in farms in 1900—acres	47,814
Improved land in farms—acres	16,547
Improved land in farms in 1900—acres	13,383
Woodland in farms—acres	2,579
Other unimproved land in farms—acres	35,466
Per cent of land area in farms	12.2
Per cent of farm land improved	30.3
Average acres per farm	237.4
Average improved acres per farm	71.9

VALUE OF FARM PROPERTY.	
All farm property	$1,626,184
All farm property in 1900	$954,520
Per cent increase, 1900–1910	....
Land	$841,518
Land in 1900	$434,560
Buildings	$247,020
Buildings in 1900	$163,670
Implements and machinery	$75,485
Implements, etc., in 1900	$39,490
Domestic animals, poultry, and bees	$462,161
Domestic animals, etc., in 1900	$316,800
Per cent of value of all property in—	
Land	51.8
Buildings	15.2
Implements and machinery	4.6
Domestic animals, poultry, and bees	28.4

Calves	775
Yearling steers and bulls	425
Other steers and bulls	370
Value	$207,235
Horses:	
Total number	2,542
Mature horses	2,048
Yearling colts	403
Spring colts	91
Value	$172,654
Mules:	
Total number	27
Mature mules	8
Yearling colts	19
Spring colts	....
Value	$1,780
Asses and Burros:	
Number	1
Value	$500
Swine:	
Total number	1,830
Mature hogs	966
Spring pigs	864
Value	$13,081
Sheep:	
Total number	10,548
Rams, ewes, and wethers	10,110
Spring lambs	438
Value	$53,345
Goats:	
Number	14
Value	$102

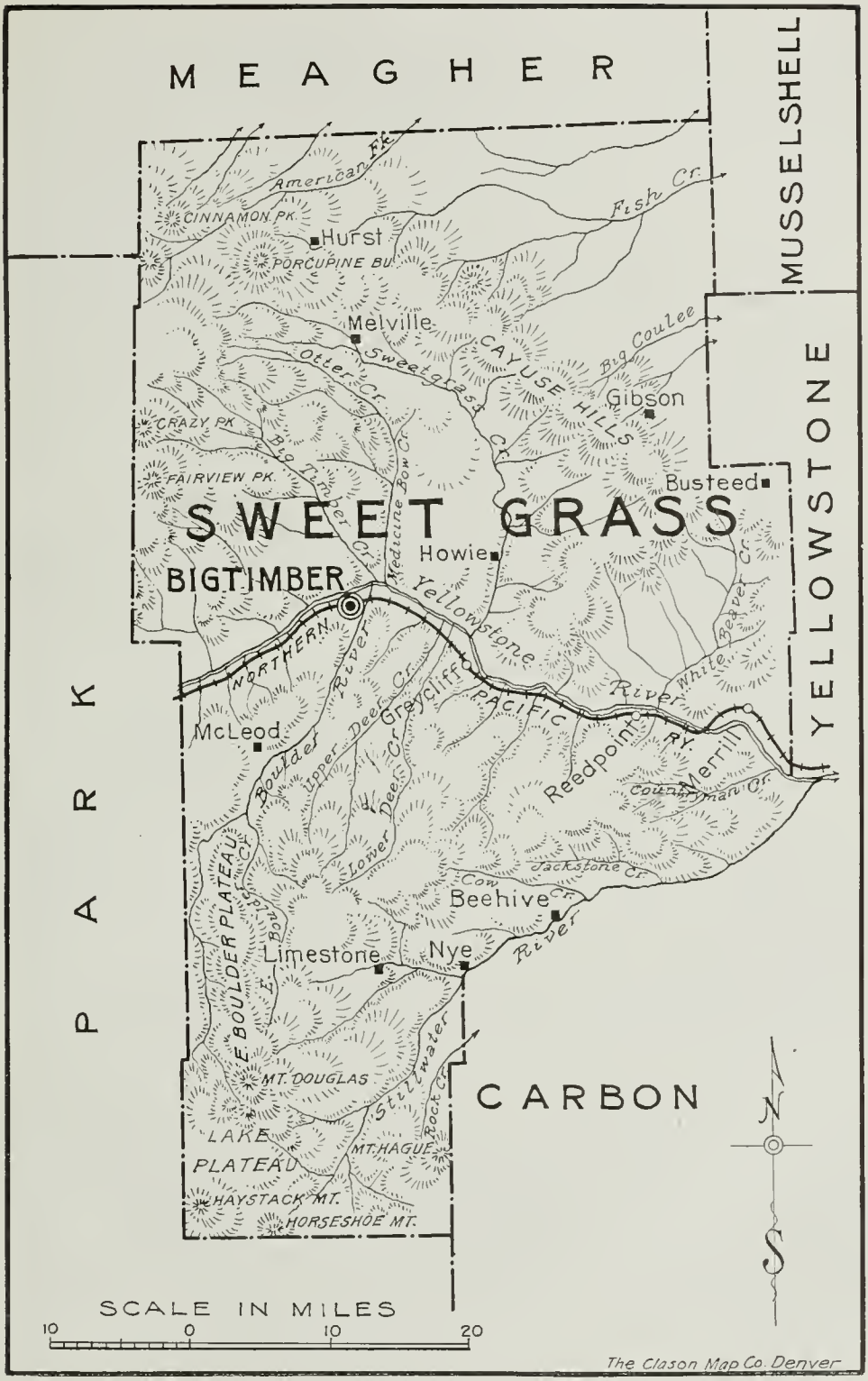
POULTRY AND BEES.	
Number of poultry of all kinds	16,171
Value	$13,464
Number of colonies of bees	....
Value	....

SWEET GRASS COUNTY.

Sweet Grass county, which was organized in 1895, is situated in the southern part of the state. The Yellowstone river runs from west to east nearly through its center. On the south the land rises from the level of the river to a high range of mountains in which head the Boulder and Stillwater rivers; and on the north the land rises to the Crazy mountains. Big Timber and Sweet Grass creeks are large streams that enter the Yellowstone river from the north. The northern part of the county is drained by tributaries of the Musselshell river.

In the southern part, much of which is in a forest reserve, are tracts of merchantable timber and a highly mineralized district containing ores of gold, silver, lead and copper. Coal has also been found. This region is one of remarkable scenic beauty. Many visitors come each year to fish in the Boulder river, a beautiful mountain stream in which trout abound. One of the most wonderful natural objects in the state is the Natural Bridge over the Boulder river. On several streams are cascades of rare beauty.

The county is well watered and there are many valleys. The Yellowstone valley, about 55 miles long by 2 wide, the valleys of the Boulder, Big Timber, Sweet Grass, American Fork and Otter creek, of varying length and width, are the chief agricultural districts. Private irrigation ditches have brought water to the lands in the valleys where hay is the chief crop and is raised in connection with stock growing. The county is


MEAGHER
MUSSELSHELL
YELLOWSTONE
PARK
CARBON
SWEET GRASS
BIGTIMBER
Hurst
Melville
Gibson
Busteed
Howie
McLeod
Limestone
Nye
Beehive
Reedpoint
Merrill
American Fk.
CINNAMON PK.
PORCUPINE BU.
Fish Cr.
Big Coulee
CAYUSE HILLS
Sweetgrass Cr.
Otter Cr.
CRAZY PK.
FAIRVIEW PK.
Big Timber Cr.
Medicine Bow Cr.
Yellowstone River
NORTHERN PACIFIC RY.
White Beaver Cr.
River
Boulder River
Upper Deer Cr.
Lower Deer Cr.
Grayclift
Countryman Cr.
Jackstone Cr.
Cow Cr.
E. Boulder R.
E. BOULDER PLATEAU
MT. DOUGLAS
LAKE PLATEAU
MT. HAGUE
HAYSTACK MT.
HORSESHOE MT.
Stillwater River
Rock Cr.
SCALE IN MILES
10 0 10 20
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noted for the excellence of the native grasses and stock growing is an important and profitable industry. Sheep are owned in large numbers and great quantities of wool are shipped from Big Timber.

Farming is of irrigated and unirrigated land, the latter a recent development. Many acres are under private irrigation ditches, and a great impulse has been given to the agricultural development of the county by the completion of the Big Timber Carey Act project which is described on another page. Many new settlers on these lands raised excellent crops in 1911 and 1912, more land will be cultivated next year, and a large and prosperous community of farmers and fruit growers will occupy many acres that a few years ago were used only for grazing. Oats 162 bushels to the acre, barley showing a cash return of $48 an acre, wheat from 20 to 40 bushels, flax running to 25 bushels an acre, and potatoes remarkable for size and quality are reported as having been raised on lands in this project in 1911. Alfalfa is the chief crop on irrigated lands and yields about four tons per acre. P. A. Bruffy of McLeod harvested 59 bushels of wheat and 70 bushels of oats to the acre. On the farm of J. H. Amerman, near Big Timber, wheat yielded 50 bushels to the acre, and Andrew Forsyth of Grey Cliff threshed 691 bushels of wheat from 12 acres, and his oats averaged 94 bushels to the acre. C. O. Hathaway's field of 15 acres of blue stem wheat yielded 675 bushels.

In his first season of farming in Sweet Grass county Joseph Meister, who recently came from Saskatchewan, Canada, and filed on a homestead, threshed 3,061 bushels of Turkey Red wheat from a 79 acre field. George Blair raised 1,010 bushels of oats on a sixteen acre field, and the oats weighed 42 pounds to the bushel. W. A. Carl threshed 695 bushels of Turkey Red wheat from 15 acres; 124 bushels, machine measurement, of club wheat from two acres, the wheat weighing 71 pounds to the bushel, and a field of 30 acres of oats yielded an average of 70 bushels per acre. Good yields of flax have been made, and potatoes and rutabagas of surprising size have been shown. Excellent crops of corn have been raised.

From the Census Bulletin, "Statistics of Agriculture—Montana," the following figures are taken:

PRINCIPAL CROPS IN 1910.

Crop.	Acres.	Production. (Bushels)	Crop.	Acres.	Production. (Tons)
Corn.....	20	790	Hay and forage, total	32,814	71,268
Oats.....	7,625	281,359	Timothy alone	2,422	4,247
Wheat....	1,096	26,143	Timothy and clover mixed....	308	422
Barley....	624	16,392	Alfalfa	21,594	56,473
Rye.....	249	4,631	Other tame and cultivated grasses (exclusive of clover alone)	1,016	1,721
Flaxseed..	2	24	Grains cut green	652	1,000
Dry Peas..	....	289	All other hay and forage.....	6,822	7,405
Potatoes..	295	60,222			

Farming without irrigation is succeeding because the soil is fertile and the rainfall averages about 20 inches annually. Many settlers have come into the northern and eastern parts of the county and are transforming what used to be a noted range country into a region of productive farms.

Many orchards have been set out and the county promises to become a large producer of fruit. The soil and climate are well adapted for the growth of sugar beets. Mr. G. B. Pope of Big Timber in a letter to the Big Timber Commercial Club says:

"Sugar beets and sugar beet tops and pulp all make fat, either beef, mutton or pork, very rapidly—more rapidly and much cheaper than corn or any other feed that we have at the pesent time. In conversation yesterday with a field man for the beet sugar factory at Billings, a man who has had years of experience in Colorado and other sugar beet states, he informed me, that actual experiments show that five acres of sugar beets have a feeding value of 30 acres of corn; also that the feed value of one ton of beets, with beef and mutton at the present prices, is worth $12. This seems rather large to the writer, but cut it in two and then the stockmen and ranchers of the Yellowstone valley can make beef and mutton cheaper than can be done in any of the corn states, or any other place that I know of. Besides we have the best market for such stuff, being situated midway between the eastern and western markets, with the great home demand at hand. While beets pay large profits when raised for sugar, I know they will pay much larger profits when raised for feeding hogs, sheep and cattle which do extremely well on them and fatten rapidly. On good soil, properly handled, they yield from 15 to 20 tons per acre, and the total cost per acre from seed time to money in bank is $35; then the tops are left, which are worth and will sell for $3 per acre. There are net profits of $50 to $75 per acre, depending upon the yield. What business pays better than this?"

Hog raising is attracting attention and the conditions are favorable for its development into a very profitable branch of farming. The excellence of the grasses, water and climate suggest that dairying ought to become one of the leading industries.

Small towns that are trading points for the surrounding country are Melville in the northern and McLeod in the southern part of the county. Big Timber, the county seat, is the chief town. It is an attractive and growing place and has an elevator, a creamery, a newspaper, hotels, stores, schools, churches, a hospital, a city hall, miles of cement sidewalks, electric lights, a water works system, an attractive court house, and is the trading and shipping point for a rich agricultural and stock country. Of 26,000 horse power available only 60 horse power is developed.

The county has won many prizes for farm products. At the Dry Farming Congress of 1911 John Forster of Grey Cliff won two gold medals, two first premiums, two second premiums and six third premiums for different kinds of grain in strong competition with exhibits from Canada and from various states.

Sweet Grass county will lose territory from its northern part if Wheatland county is created and from its eastern part if Stillwater county is created. The electors residing in the territory to be embraced in the proposed new counties will decide at elections to be held early in 1913 whether they are to be established.

The area of Sweet Grass county is 2,918 square miles. The population in 1010 was 4,029: the votes cast in 1908 were 825, and the voters registered in 1912 numbered 1,250.

Assessed valuations for the last three years were as follows: $5,604,834 in 1910; $5,759.818 in 1911; and $5,945,342 in 1912. At the last assessment real estate and improvements were valued at $3,014,809, and personal property at $1,864,831. Horses of all classes numbered 4,954, valued at $248,965; cattle of all kinds 18,834 head, valued at $378,235; sheep 276,364, valued at $560,803, and hogs of the value of $2,615. The acres of land assessed numbered 688,354, the average valuation being $3.34 per acre. One telegraph company had 52 miles of line and three telephone companies operate in the county. The Northern Pacific is the only railroad and has 66 miles of track.

July 1, 1912, there were in Sweet Grass county 332,945 acres of surveyed, unappropriated public land in the Bozeman land district, 8,045 acres of surveyed, unappropriated public land in the Helena land district, and 30,566 acres of surveyed, unappropriated public land in the Lewistown land district.

The secretary of the Commercial Club at Big Timber will furnish further informtaion about opportunities in Sweet Grass county, on request.

FARMS AND FARM PROPERTY IN 1910, COMPILED FROM U. S. CENSUS REPORT.

Population	4,029
Population in 1900	3,086
Number of all farms	473
Number of all farms in 1900	402
Color and nativity of farmers:	
Native white	325
Foreign-born white	144
Negro and other nonwhite	4
Number of farms, classified by size:	
Under 3 acres	7
3 to 9 acres	2
10 to 19 acres	....
20 to 49 acres	4
50 to 99 acres	10
100 to 174 acres	202
175 to 259 acres	25
260 to 499 acres	98
500 to 999 acres	44
1,000 acres and over	81
LAND AND FARM AREA.	
Approximate land area—acres	1,867,520
Land in farms—acres	457,715
Land in farms in 1900—acres	380,188
Improved land in farms—acres	107,563
Improved land in farms in 1900—acres	39,495
Woodland in farms—acres	12,835
Other unimproved land in farms—acres	337,317
Per cent of land area in farms	24.5
Per cent of farm land improved	23.5
Average acres per farm	967.7
Average improved acres per farm	227.4
VALUE OF FARM PROPERTY.	
All farm property	$11,444,937
All farm property in 1900	$3,748,705
Per cent increase, 1900–1910	205.3
Land	$7,650,367
Land in 1900	$1,398,720
Buildings	$703,995
Buildings in 1900	$327,040
Implements and machinery	$260,685
Implements, etc., in 1900	$100,460
Average values:	
All property per farm	$24,196
Land and buildings per farm	$1,,662
Land per acre	$16.71
Land per acre in 1900	$3.68
DOMESTIC ANIMALS. (Farms and Ranges)	
Farms reporting domestic animals	443
Value of domestic animals	$2,816,226
Cattle:	
Total number	22,831
Dairy cows	1,771
Other cows	8,301
Yearling heifers	2,794
Calves	1,591
Yearling steers and bulls	2,693
Other steers and bulls	3,461
Value	$668,098
Horses:	
Total number	5,089
Mature horses	4,300
Yearling colts	642
Spring colts	147
Value	$524,133
Mules:	
Total number	43
Mature mules	38
Yearling colts	4
Spring colts	1
Value	$5,590
Asses and Burros:	
Number	10
Value	$2,660
Swine:	
Total number	2,720
Mature hogs	1,608
Spring pigs	1,112
Value	$22,745
Sheep:	
Total number	299,045
Rams, ewes, and wethers	266,221
Spring lambs	32,824

Domestic animals, poultry, and bees	$2,829,890
Domestic animals, etc., in 1900	$1,922,485
Per cent of value of all property in—	
Land	66.8
Buildings	6.2
Implements and machinery	2.3
Domestic animals, poultry, and bees	24.7
Value	$1,588,868
Goats:	
Number	830
Value	$4,132
POULTRY AND BEES.	
Number of poultry of all kinds	21,704
Value	$12,633
Number of colonies of bees	125
Value	$1,031

TETON COUNTY.

The extensive territory lying on the eastern side of the Rocky mountains extending from the Canadian boundary on the north to the northern boundary lines of Lewis and Clark and Cascade counties and on the east to the western boundaries of Hill and Chouteau counties is embraced in Teton county, which was created in 1893. On the west it extends to the summit of the Rocky mountains; and owing to its great extent and differences in altitudes the climate and soil at one place may differ considerably from those at another. In the mountains the snowfall is heavy and important rivers, furnishing water for irrigating the low lands, have their source there. There are passes through which the chinook winds come and temper the winter climate which is seldom severe enough to prevent outdoor work for any extended period. The average rainfall is about 16 inches. In the northwestern corner is the Blackfeet Indian reservation which, it is expected, will be opened to settlement during 1913. A part of Glacier Park that includes much of its most attractive scenery is in this county.

The industries are live stock and farming. Teton county is a famous stock region, contains many noted ranches where blooded horses, herds of high grade cattle, and fine flocks of sheep are owned; and the live stock industry is still a leading one. Large quantities of wool are sold annually.

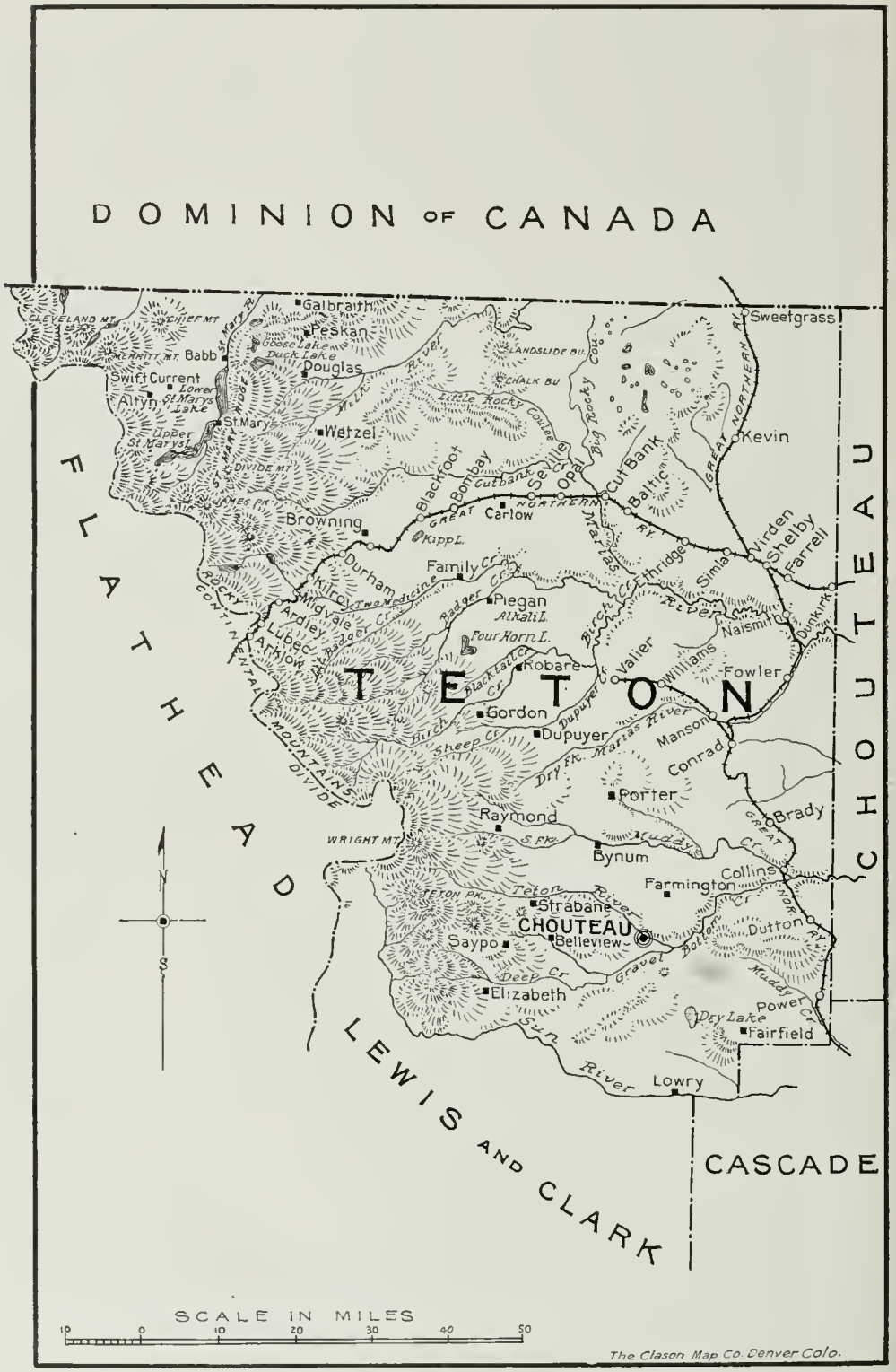
Farming which is of irrigated and unirrigated land has made a wonderful advance in the last few years.

From the Census Bulletin, "Statistics of Agriculture—Montana," the following figures are taken:

PRINCIPAL CROPS IN 1910.

Crop.	Acres.	Production. (Bushels)	Crop.	Acres.	Production. (Tons)
Corn	....	.....	Hay and forage, total	34,125	34,882
Oats	7,175	278,638	Timothy alone	1,947	2,584
Wheat	8,286	194,656	Timothy and clover mixed	10	15
Barley	321	10,455	Alfalfa	1,849	3,587
Rye	22	565	Other tame and cultivated grasses (exclusive of clover alone)	2,069	1,915
Flaxseed	35	600	Grains cut green	584	763
Dry Peas	....	11	All other hay and forage	27,666	26,018
Potatoes	197	25,667			

Streams rising in the Rocky mountains furnish water for irrigating, and there are many private ditches in the main and smaller valleys. In the Blackfeet reservation the government is working on a large reclamation project, and in the southern part is the Sun river project, both of which are described elsewhere. Also in the southern part is the Teton project for the reclamation of about 55,000 acres near Brady.


DOMINION OF CANADA
FLATHEAD
LEWIS AND CLARK
CASCADE
CHOUTEAU
TETON
Galbraith
Peskan
Babb
Douglas
Swift Current
Altyn
Lower St Marys Lake
St Mary
Upper St Marys L
Wetzel
Browning
Kipp L
Carlow
Blackfoot
Bombay
Gutbank
Seville
Opal
Big Rocky Coulee
Curbank
Baltic
Kevin
Sweetgrass
Great Northern Ry
Virden
Shelby
Farrell
Simla
Dunkirk
Naismith
Fowler
Williams
Valier
Thrigde
Durham
Kilroy
Midvale
Ardley
Lubec
Arthlow
Two Medicine
Badger Cr
Family Cr
Piegan
Alkali L
Four Horn L
Birch Cr
Blacktail Cr
Robare
Gordon
Dupuyer
Sheep Cr
Dry Fk Marias River
Manson
Conrad
Porter
Raymond
Bynum
Brady
Great Northern Ry
Collins
Farmington
Strabane
CHOUTEAU
Belieview
Saypo
Dutton
Deep Cr
Elizabeth
Teton River
Teton Pk
Wright Mt
Rocky Mountain Divide
Dey Lake
Power
Fairfield
Sun River
Lowry
SCALE IN MILES
10 0 10 20 30 40 50
The Clason Map Co. Denver Colo.

Teton county contains great expanses of beautiful prairie land, and in the past few years many settlers have moved in and begun farming on unirrigated lands. Yields on dry land farms of from 18 to 35 bushels of spring wheat, 25 to 40 bushels of fall wheat, 40 to 65 bushels of oats, and 40 to 50 bushels of barley are reported. Potatoes and vegetables have done well. Where the proper system of cultivation has been followed paying crops have been raised; and the success of these pioneer dry land farmers will lead to the establishment of many thousand farm homes on the broad prairies.

The Burton bench is a large farming district where wheat yields average 40 bushels an acre and oats 85 bushels. There is no record of heavier oats than those grown on this bench; a bushel has weighed 55 pounds; and the lightest of 83 samples sent to the World's Fair was heavier than the heaviest from any other state.

The largest private irrigation project in the state is the Valier Carey Act project which contemplates the reclamation of 126,148 acres, including 40,568 acres of deeded land. Much of the work has ben completed and many acres of land sold, occupied and cultivated. Of the Valier project the Conrad Independent said:

In this project the farmer who is looking for a gilt-edge, dead sure proposition will find just what he wants. The lands are rich beyond description, and with an abundance of water, there will always be an insurance against even a crop shortage, and a failure should never be experienced. It has been pronounced one of the very finest irrigation projects in the world, and rightly so. Lands are sold on easy payments, and some of the very finest lands within the project yet remain to be taken. Forty dollars and fifty cents per acre is the price asked for the lands with the water right, and this sum is divided up into long time payments at a low rate of interest.

On Friday, Sept. 15, 1911, Samuel Morgan, whose irrigated land lies seven miles northeast of Valier, threshed oats that went 103 measured bushels to the acre. These oats weighed 48 pounds to the measured bushel. At 32 pounds to the bushel which is the standard weight, Mr. Morgan's yield was 15¼ bushels per acre of standard weight oats. At $1 per cwt., which is market quotation at the Valier elevator today, the crop returns were $94.44 per acre. A crop bringing $94.44 on land that cost $40.50 per acre with the privilege of fourteen years in which to pay for same is, all must admit, going some.

Flax has made large yields in several districts; and of the Conrad neighborhood an expert of the American Linseed Oil Company said to a reporter of the Great Falls Tribune that it was "the best flax country in the world." The Conrad Independent claims the record for the highest yield of flax in Montana for 1912 for I. J. Corry who, on an 80 acre field, threshed a crop of flax averaging 31½ bushels to the acre. John A. Nelson raised 125 bushels of spelt on two acres. Cabbages exceeding twenty pounds in weight were grown in widely separated parts of the county. Affidavits establish the fact that one turnip, raised by H. O. Burton at Valier and given by him to the Hotel Dean at Conrad, was so large that it provided a side dish of turnips to each of fifty people who took dinner at the hotel Oct. 9, 1911. A turnip grown by Clermont Yerkes weighed 16½ pounds. Six potatoes from John Beachem's place near Valier weighed

24 pounds; L. L. Moore raised 54 bushels from one bushel of seed, and D. F. Mains 251 bushels on five-eighths of an acre. Jacob Vanderhall, who lives four miles from Conrad, received $75 from the sale of potatoes grown on one quarter of an acre. Mr. Bogart raised sugar beets successfully without irrigation near Conrad; and as the yields are greater on irrigated lands of which there is a great acreage near Conrad and Valier, the location of a beet sugar factory in this neighborhood would be desirable for the land owners and profitable to the factory owners.

The Cut Bank Tribune of December 19th, 1912, reports yields on dry land farms of as high as 100 bushels of oats, 35 bushels of winter wheat, 28.6 bushels of spring wheat, 26 bushels of flax and 450 bushels of potatoes to the acre. One experimental acre of winter wheat produced 64 bushels. The Shelby News tells of Mrs. J. R. Bell who lives on a homestead near Shelby and who netted $210 from one acre of sweet corn. On a dray land farm east of Valier W. L. Hunter raised 43 bushels of wheat to the acre.

On the irrigated lands in the Valier project Mr. Campbell of the company places the average returns on crops as follows: Flax, 18 bushels an acre; barley, 40 bushels; winter wheat, 40 bushels; spring wheat, 30 bushels; oats, 65 bushels. John Evans of Williams raised 870 bushels of wheat on 17 acres.

Power, Dutton, Collins and Brady are thriving new towns that are shipping points for a large and rapidly developing dry farming region.

At the Minenapolis Land Show in 1912 of the best ten entries of wheat five were from Montana, including the first, second, third and fourth. Peter DeBoer of Conrad was second with a score of 84.23 points, J. F. Kane of Conrad third with a score of 81.05 points, Dick Huin of Conrad fourth with a score of 80.08 points, and Josephine Connelly of Power tenth; so that it appears that four of the ten best entries of wheat among the great number entered from various states were from Teton county, Montana, surely a remarkable testimonial to the fertility of the soil and the excellence of the climate for the production of prolific crops of the best grains.

In the mountain ranges are indications of minerals, but little work has been done. Coal is mined in a small way at several places; and there are indications of petroleum.

The chief towns are Choteau, Conrad, Valier, Shelby, Cut Bank and Sweet Grass. Sweet Grass is at the Canadian line and is a trading point for the Sweet Grass hills region. Cut Bank is a railroad and trading point adjoining the Blackfeet reservation and a convenient point from which to reach the large tracts that have recently been restored to entry. Shelby is a railroad junction point near which many new settlers have located. All are growing towns in rapidly developing neighborhoods. Valier is the terminus of the Montana Western railway which connects at Conrad with the Great Northern railroad and is in the center of the Conrad-Valier project. It is located on Lake Frances, a large and

beautiful artificial lake, and has grown in three years to be a large, busy and well built town. It has an electric light and power plant, a water works system, cement sidewalks, two telephone systems, elevators, a stone school building, a brick depot, two churches, stores, a bank, a newspaper, numerous fine residences and a hotel building that cost $50,000. Valier is a marvel for its age, and is an example of the energy and ability that is bringing about the remarkable development Montana is undergoing.

Conrad, the chief town, had a population of 888 in 1910 which has since much increased; and 200,000 acres of irrigated and 600,000 acres of unirrigated land are tributary to it. It is an incorporated city, has good schools, a library, water works, sewers, two telephone exchanges, banks, business houses, elevators, a newspaper, and is a growing place. In October, 1911, Conrad headed the list of shipping points on the Great Northern in Montana, sending out 250 carloads of freight.

The county seat is Choteau, an attractive town of about 1,000 population. Without railroad facilities at the present time it will probably be reached by two lines before the year is over. Beautifully situated in the fertile valley of the Teton river and surrounded by a rich farming and stock growing district for which it is the trading point, Choteau has handsome public and private buildings, churches, schools, a newspaper, department stores and other business houses, banks, hotels, a flour mill, a creamery and electric lights. The Teton County Fair is annually held here.

The Shelby branch of the Great Northern which joins the main line at Shelby and extends to the Canadian boundary at Sweet Grass runs through the eastern part of Teton county and the main line through the northern central part. From Conrad the Montana Western railway extends twenty miles to Valier. These are the only lines now in operation, but Teton county is certain to be the scene of great activity in railroad construction in the near future. The Great Northern has constructed the grade for a part of the way on the branch that it is to build from Power on the Shelby branch to Choteau and thence north to Dupuyer with a probable extension to Midvale on the main line. The Milwaukee road will build from Great Falls up Sun river to Choteau and thence north to Agawam, a new town on Muddy creek about eight miles east of Bynum. A survey has been made for an extension to a point west of Cut Bank. The "Soo" Railroad Company which has announced its intention to build 725 miles of line in Montana has not announced its route, but is expected to reach Fort Benton and to build west from that city and to cross the Shelby branch of the Great Northern at Dutton. A survey has been made for a line across the Burton bench to a point near Valier and also of a route through the Blackfeet reservation that may tie up with the other surveyed line.

The area of Teton county is 7,581 square miles. The population in 1910 was 9,546 as against 5,080 in 1900, an increase of 88 per cent; the votes cast in 1908 were 1,027, and the number of voters registered in 1912 was 2,773.

Assessed valuations for the last three years were as follows: $8,324,483 in 1910; $9,800,136 in 1911; and $10,883,435 in 1912. At the last assessment real estate and improvements were valued at $4,728,067, and personal property at $2,790,276. Horses of all classes numbered 11,603, valued at $650,160; cattle of all kinds 11,904 head, valued at $254,848; sheep 248,110, valued at $501,242; and hogs of the value of $5,080. The acres of land assessed numbered 575,254, the average valuation being $5.30 per acre. Five telegraph lines had 676 miles of line and two telephone companies 293 miles of wire. The Great Northern had 241 miles of track and the Montana Western 21 miles, a total of 261 miles.

July 1, 1912, there were in Teton county 24,825 acres of surveyed and 75,038 acres of unsurveyed, unappropriated public land in the Helena land district, and 390,568 acres of surveyed and 35,000 acres of unsurveyed, unappropriated public land in the Great Falls land district.

Secretaries of Commercial Clubs at Choteau, Conrad and Shelby will furnish further information about opportunities in Teton county, on request.

FARMS AND FARM PROPERTY IN 1910, COMPILED FROM U. S. CENSUS REPORT.

Population	9,546
Population in 1900	5,080
Number of all farms	1,187
Number of all farms in 1900	347
Color and nativity of farmers:	
Native white	487
Foreign-born white	290
Negro and other nonwhite	410
Number of farms, classified by size:	
Under 3 acres	6
3 to 9 acres	....
10 to 19 acres	....
20 to 49 acres	8
50 to 99 acres	29
100 to 174 acres	448
175 to 259 acres	26
260 to 499 acres	525
500 to 999 acres	84
1,000 acres and over	70
LAND AND FARM AREA.	
Approximate land area—acres	4,851,840
Land in farms—acres	530,714
Land in farms in 1900—acres	274,074
Improved land in farms—acres	217,052
Improved land in farms in 1900—acres	49,768
Woodland in farms—acres	333
Other unimproved land in farms—acres	313,329
Per cent of land area in farms	10.9
Per cent of farm land improved	40.9
Average acres per farm	447.1
Average improved acres per farm	182.9
VALUE OF FARM PROPERTY.	
All farm property	$11,680,410
All farm property in 1900	$4,731,270
Per cent increase, 1900-1910	146.9
Land	$6,998,460
Land in 1900	$1,336,340
Buildings	$649,338
Buildings in 1900	$260,130
Implements and machinery	$334,246
Implements, etc., in 1900	$99,350
Domestic animals, poultry, and bees	$3,698,366
Domestic animals, etc., in 1900	$3,035,450

Average values:	
All property per farm	$9,840
Land and buildings per farm	$6,443
Land per acre	$13.19
Land per acre in 1900	$4.88
DOMESTIC ANIMALS. (Farms and Ranges)	
Farms reporting domestic animals	1,019
Value of domestic animals	$3,681,246
Cattle:	
Total number	41,572
Dairy cows	1,739
Other cows	9,377
Yearling heifers	2,563
Calves	1,521
Yearling steers and bulls	2,463
Other steers and bulls	2,833
Value	$1,294,088
Horses:	
Total number	16,845
Mature horses	7,974
Yearling colts	1,507
Spring colts	457
Value	$1,162,099
Mules:	
Total number	202
Mature mules	112
Yearling colts	184
Spring colts	6
Value	$23,413
Asses and Burros:	
Number	5
Value	$4,700
Swine:	
Total number	1,241
Mature hogs	673
Spring pigs	568
Value	$12,053
Sheep:	
Total number	242,402
Rams, ewes, and wethers	211,804
Spring lambs	30,598
Value	$1,184,583
Goats:	

Per cent of value of all property in—	
Land	59.9
Buildings	5.6
Implements and machinery	2.9
Domestic animals, poultry, and bees	31.7

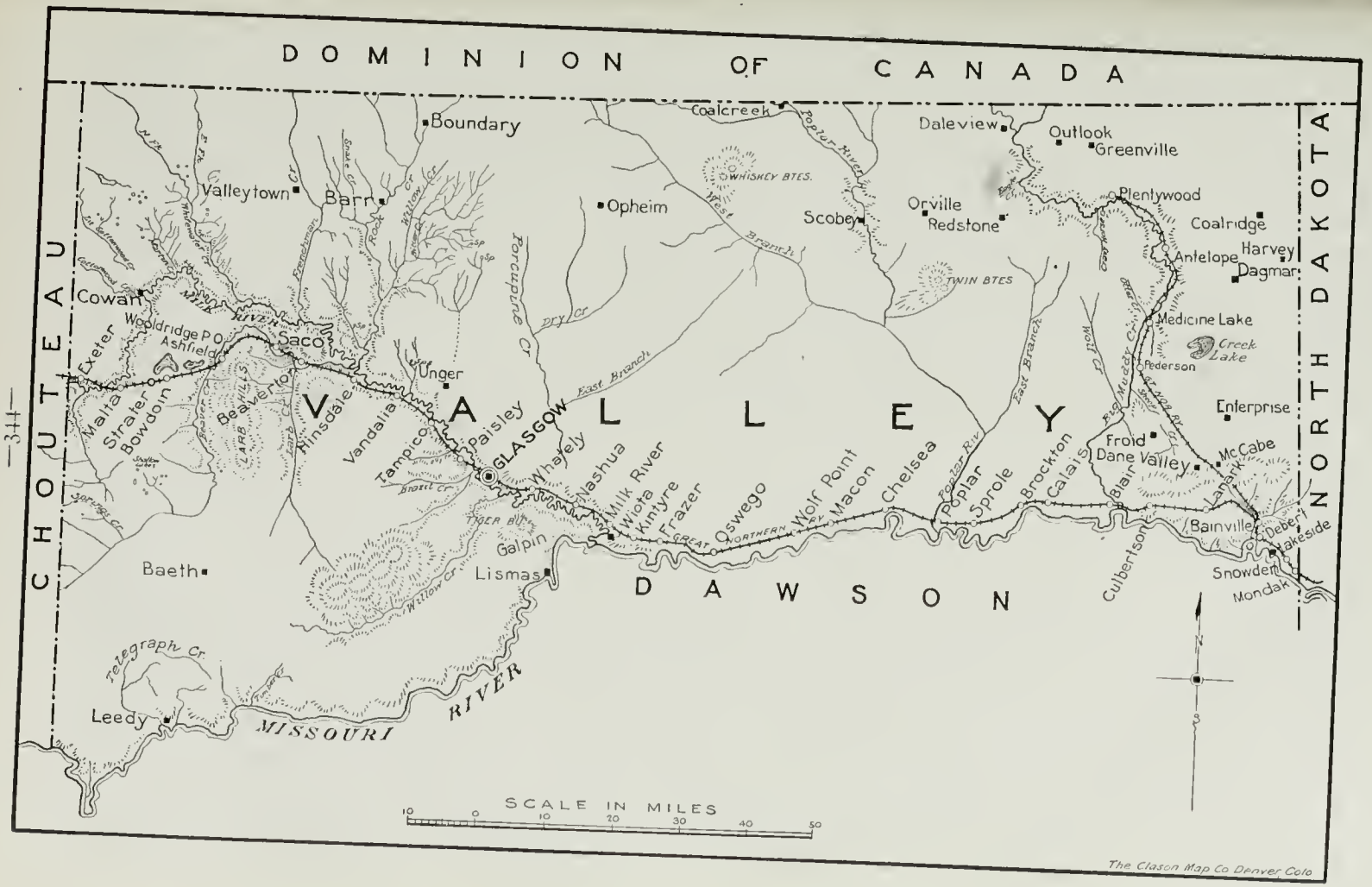
Number	101
Value	$305
POULTRY AND BEES.	
Number of poultry of all kinds	20,884
Value	$17,120
Number of colonies of bees	....
Value	....

VALLEY COUNTY.

Valley county, which occupies the northeastern corner of the state and is the gateway county for those entering Montana by trains on the Great Northern railway, was created in 1893. It is an empire of prairie lands having an area of 13,515 square miles. It includes the Fort Peck Indian reservation of which about 1,800,000 acres of land will, it is expected, be opened to settlement in 1913. The county is too large for the convenient administration of its affairs and will probably soon be divided by putting the territory lying east of the line running north and south along the western boundaries of the townships in ranges 46 east, with an extension for a short distance on the south into townships in range 45 east—a line drawn about 36 miles east of Glasgow—into a new county to be named Sheridan.

The Missouri river is the southern boundary, and the land rises north to the Canadian boundary line. It is a region of prairies and rolling country through which flow the big Muddy, Poplar and Milk rivers, the latter having a large valley a large part of which will be irrigated by the Milk river reclamation project. The irrigated lands along the streams produce very large yields of hay, wheat, grain and vegetables. Until a few years ago stock raising was the main industry and is still of great importance, but is yielding first place to agriculture. The bench lands and prairies have been settled upon by thousands of homeseekers who have transformed large parts of the county into productive farming regions. The lands are fertile, the climate good, and the rainfall sufficient for the profitable production of crops without irrigation when proper methods of cultivation are followed. The success of those who began farming on the bench lands a few years ago soon became known from private letters to relatives and friends and by other means, and the result has been a very large immigration.

On unirrigated lands in the vicinity of Malta 40 to 70 bushels of oats, 30 to 50 bushels of wheat, 30 to 50 bushels of rye and 15 bushels of flaxseed are reported to have been raised. A letter from the county assessor written in August, 1911, states that of the patented land 14,500 acres of grain land and 21,648 acres of hay land were in cultivation and that 800,000 acres of government land were in cultivation. The principal crop is flax. Joe Lafond told the Malta Enterprise that he harvested 28 bushels of flaxseed to the acre from 3½ acres. J. B. Masterson threshed 13 bushels of flax to the acre and 30 bushels of oats. On irrigated land Hon. John Survant obtained yields of 18 2-3 bushels of flax, 42½ bushels of wheat and 60 bushels of oats to the acre. J. H. Atwood raised 40 bushels of corn to the acre. Dan McKay had 10,000 cabbages. Anton Kott


DOMINION OF CANADA
CHOUTEAU
NORTH DAKOTA
VALLEY
DAWSON
GLASGOW
Boundary
Coalcreek
Daleview
Outlook
Greenville
Valleytown
Barr
Opheim
Whiskey Btes.
Scobey
Orville
Redstone
Plentywood
Coalridge
Antelope
Harvey
Dagmar
Twin Btes
Medicine Lake
Creek Lake
Pederson
Enterprise
Froid
Dane Valley
McCabe
Lasalle
Bainville
Lakeside
Snowden
Mondak
Culbertson
Cowan
Exeter
Wooldridge P.O.
Ashfield
Saco
Malta
Strater
Bowdoin
Beaverton
Hinsdale
Vandalia
Tampico
Paisley
Unger
Whitely
Nashua
Milk River
Wiota
Kintyre
Frazer
Oswego
Wolf Point
Macon
Chelsea
Poplar
Sprole
Brockton
Calais
Blair
Baeth
Galpin
Lismas
Tiger Butte
Telegraph Cr.
Leedy
Missouri River
Poplar River
West Branch
East Branch
Porcupine Cr.
Dry Cr.
Willow Cr.
Big Muddy Cr.
Big Muddy R.
Fox Hills
Lake Bowdoin
Great Northern Ry.
Foster Riv.
SCALE IN MILES
10 0 10 20 30 40 50
The Clason Map Co Denver Colo

of Poplar is reported to have raised a mangelroot weighing 12 pounds, a sugar beet nearly 9 pounds, and a common beet 9½ pounds. F. P. Atkinson brought to the office of the Hinsdale Homestead a pumpkin that weighed 40 pounds. Near Galpin, O. G. Hinaman raised good peanuts. C. W. Wilkins of Wiota had excellent success with potatoes, cucumbers, corn, and showed perfectly matured plums measuring five inches in circumference. M. L. Wilson, an agricultural expert, declared that the field of corn he saw growing on the place of D. M. Moothart near Culbertson was the best looking field of corn he had ever seen in Montana. On dry land near Culbertson J. M. Fleischman raised a ten pound turnip; A. Larson of Scobey reports a crop of 4,000 bushels of flax from 350 acres.

The list of elevators printed on another page is evidence of the wonderful development this county has undergone in the last three years, although only a small part of the farming lands is yet in cultivation. From Plentywood it was estimated that 450 cars of grain and flax of the 1912 crop would be shipped. During 1912 the shipments from Culbertson were about 78 cars of wheat and 82 cars of flax, about 693 head of cattle, and 3,840 sheep. Special correspondence in the Helena Record states 922,000 bushels of grain, a net gain over 1911 of 722,000 bushels, were to be marketed at Medicine Lake during the year.

From all parts come reports of good crop yields. There are many farms near Scobey, sixty miles from a railroad, and yields of from 20 to 45 bushels of wheat to the acre, 50 to 112 bushels of oats, and 12 to 25 bushels of flax are reported. In the Bainville neighborhood wheat yielded from 26 to 40 bushels; Bill Rhea harvested 124 bushels of oats to the acre; and on a 39 acre field Frank Tillinghast says he threshed 1,019 bushels of flax, a yield of more than 26 bushels to the acre. The Culbertson Republican says that Butterfield and Englebright threshed 159 acres of flax that yielded 3,065 bushels, 122 acres of wheat that yielded 2,728 bushels, and 15 acres of oats that yielded 2,205 bushels or 147 bushels per acre. The Glasgow News reports excellent crops near that city and at Lismas, and gives the Nashua Independent as authority for the statement that Mac Hunter, residing near Gilpin, threshed 148 bushels of oats from one acre. Crops in the Malta neighborhood were also good. An Indian agricultural fair was held at Poplar, and Hocesan, an Assiniboine Indian, whose farm is near Frazer, won the Louis W. Hill cup for the best display of products by one individual. "It must be in the soil," Hocesan is reported to have said, "for all I did was to plant the seeds."

No county has shown greater development, and the new settlers are "making good," adding to the improvements on their farms and increasing the acreage in cultivation every year. The lands included in Valley county when brought into cultivation will produce more grain than the total yields of some states. What a homestead settler thinks of the country was expressed in the following letter to J. H. Hall, Commissioner of the Bureau of Agriculture, Labor and Industry:

Poplar, Mont., November 30, 1911.

Dear Sir: I came here in 1908 (from St. Johns, N. Dak.) and settled upon a homestead. When I arrived all I had to start with was a team of small horses and practically broke. My conditions were such that I have not been able to farm extensively. I have 35 acres broke and have a comfortable small house to live in. I now have ten head of horses and am in a position to devote more of my time to farming. I have been raising good crops of all kinds every year; but on account of the fact that I have five small children, I have been doing team work, such as hauling coal and wood to market, and breaking sod for my neighbors to keep out of debt in which I have been very successful. I think this is the best poor man's country on earth, and the only thing I have to regret is that I didn't come here years ago. Enclosed is a kodak picture of my home. There is a large amount of free land left yet in this part of Montana. Very respectfully,

O. F. KALBOW.

The Hinsdale Homestead summed up the opportunities for the homeseeker in these words:

According to statistics Valley county has 5,419,297 acres of land classed as agricultural and grazing lands. Dividing this vast territory into farm units of 160 acres each, and one family to a unit of 160 we find room in this county for 33,870 farm families. Then figure five to a family, and this is the general rule for estimating population, and we find that Valley county has room for an army of 169,350 people. And this does not include the population of the towns and cities of the county. Great are the possibilities of Valley county.

From the Census Bulletin, "Statistics of Agriculture—Montana," the following figures are taken:

PRINCIPAL CROPS IN 1910.

Crop.	Acres.	Production. (Bushels)	Crop.	Acres.	Production. (Tons)
Corn.....	815	22,640	Hay and forage, total	57,057	53,637
Oats.....	18,879	705,075	Timothy alone	30	32
Wheat....	15,108	302,861	Timothy and clover mixed....	6	10
Barley....	1,752	47,333	Alfalfa	733	1,741
Rye.....	28	965	Other tame and cultivated grasses (exclusive of clover alone)	1,058	1,172
Flaxseed..	16,895	178,853	Grains cut green	1,277	2,185
Dry Peas..	....	153	All other hay and forage.....	53,953	48,496
Potatoes..	615	62,973			

Coal is abundant and farmers get their supplies from neighboring coal banks.

The main line of the Great Northern railway enters the state at Mondak in the Missouri valley which it traverses for some distance and then turns into Milk river valley which it follows to the western boundary of the county. At a point near Mondak a branch is to be built to Fairview, Dawson county, to connect with the New Rockford-Lewistown branch. A branch line extends from Bainville to Plentywood, a distance of 53 miles. According to a resolution filed in the office of the Secretary of State this line is to be extended to a point on the west branch of the Poplar river about 12 miles south of the international boundary line, a distance of 67 miles. This westward extension of the Plentywood branch will open up a fine country in which are many settlers. Scobey, a busy new town, may be reached by it. Representatives of the "Soo" railway have filed at the Glasgow land office plats covering the right of way for

a line the company will build in the eastern part of Valley county to connect with an established line in North Dakota. Commencing in section 13, 7, 36, R. 58 this line extends west through T. 36, R. 57, and 7, 36, R. 56 to a point within about eight miles of Plentywood; and it is said that rights of way further west have been secured. The eastern part of the county that is served by the Plentywood branch has filled up in the last few years and has become a great farming district. Dane valley is a well developed section inhabited by industrious and successful farmers, mostly of Danish stock. Froid and Medicine Lake are prosperous towns having elevators, banks, newspapers and business houses of many kinds. Plentywood, the terminus of the branch from Bainville, has grown into a town of considerable population, is the supply point for a large region, and its stores do a very large business. It has elevator, bank, newspaper, and many business houses, and is a growing, busy town. Mondak and Bainville in the Missouri river valley have elevators, banks, newspapers and business houses. The chief town in this part of the county is Culbertson, which has about 600 population. It is a well built town having good business buildings, schools, churches, hotels, banks, two newspapers, and is the trading point for a well developed agricultural district. Poplar is a town in the Fort Peck Indian reservation which has trade extending north and south for many miles.

The Milk river valley is to be reclaimed and settled in small farm units. In a few years it will be densely settled. The land is adapted to the raising of sugar beets and a beet sugar factory may be built. Vandalia, Saco and Malta are the chief towns in this part of the county and are trading points for the rapidly developing region north of them. Malta is the largest town in western Valley county, has many civic improvements, has banks, a newspaper, churches, school, a good hotel, many business houses, ships great quantities of blue joint hay and many cars of cattle, wool and sheep. The trade of a considerable part of the county lying between the Missouri river and the Milk river comes to Malta and it also does a large business with settlers between the Milk river and the Canadian boundary.

Glasgow, the county seat, is the principal town. It had a population in 1910 of 1,158, is the seat of the United States district land office, has electric lights, water works, a sewerage system, excellent schools, a public library, two newspapers, good hotels, large mercantile establishments and many costly public and private buildings. It is a division point on the Great Northern railroad. The railroad company employs a large number of men and disburses monthly a large sum in payment of wages. The railroad pay roll contributes largely to the prosperity of busy and growing Glasgow.

The area of Valley county is 13,515 square miles. The population in 1900 was 4,355 and in 1910 13,630, an increase of 213 per cent. The votes cast in 1908 were 1,425 and the voters registered in 1912 numbered 3,700. Assessed valuations for the last three years were as follows:

$8,583,424 in 1910; $9,849,933 in 1911; and $10,595,826 in 1912. At the last assessment real estate and improvements were valued at $2,642,996, and personal property at $3,416,476. Horses of all classes numbered 21,363, valued at $988,698; cattle of all kinds 22,133 head, valued at $450,473; sheep 203,273, valued at $399,901; and hogs of the value of $5,840. The acres of land assessed numbered 243,667, the average valuation being $3.17 per acre. Two telegraph companies had 465 miles of line and five telephone companies operated in the county. The only railroad is the Great Northern, which has 300 miles of track.

Valley county is in the Glasgow land district, and July 1, 1912, there were 2,118,415 acres of surveyed and 2,746,287 acres of unsurveyed, unappropriated public land.

Secretaries of Commercial Clubs at Culbertson, Froid, Glasgow, Hinsdale, Malta, Medicine Lake, Poplar and Saco will furnish further information about Valley county, on request.

FARMS AND FARM PROPERTY IN 1910, COMPILED FROM U. S. CENSUS REPORT.	
Population	13,630
Population in 1900	4,355
Number of all farms	1,946
Number of all farms in 1900	226
Color and nativity of farmers:	
Native white	1,294
Foreign-born white	595
Negro and other nonwhite	57
Number of farms, classified by size:	
Under 3 acres	52
3 to 9 acres	1
10 to 19 acres	1
20 to 49 acres	9
50 to 99 acres	15
100 to 174 acres	840
175 to 259 acres	75
260 to 499 acres	791
500 to 999 acres	119
1,000 acres and over	43
LAND AND FARM AREA.	
Approximate land area—acres	8,649,600
Land in farms—acres	576,130
Land in farms in 1900—acres	66,326
Improved land in farms—acres	165,043
Improved land in farms in 1909—acres	21,278
Woodland in farms—acres	13,096
Other unimproved land in farms—acres	397,991
Per cent of land area in farms	6.7
Per cent of farm land improved	28.6
Average acres per farm	296.1
Average improved acres per farm	84.6
VALUE OF FARM PROPERTY.	
All farm property	$12,416,714
All farm property in 1900	$2,319,795
Per cent increase, 1900–1910	435.2
Land	$6,855,273
Land in 1900	$244,230
Buildings	$791,632
Buildings in 1900	$107,970
Implements and machinery	$524,854
Implements, etc., in 1900	$22,990
Domestic animals, poultry, and bees	$4,244,955
Domestic animals, etc., in 1900	$1,944,605
Per cent of value of all property in—	
Land	55.2
Buildings	6.4
Implements and machinery	4.2
Domestic animals, poultry, and bees	34.2

Average values:	
All poultry per farm	$6,381
Land and buildings per farm	$3,930
Land per acre	$11.90
Land per acre in 1900	$3.68
DOMESTIC ANIMALS. (Farms and ranges)	
Farms reporting domestic animals	1,675
Value of domestic animals	$4,219,921
Cattle:	
Total number	33,552
Dairy cows	3,485
Other cows	13,683
Yearling heifers	4,095
Calves	2,798
Yearling steers and bulls	3,451
Other steers and bulls	6,040
Value	$1,003,426
Horses:	
Total number	20,653
Mature horses	16,452
Yearling colts	3,159
Spring colts	1,042
Value	$1,783,501
Mules:	
Total number	132
Mature mules	1127
Yearling colts	5
Spring colts	....
Value	$16,155
Asses and Burros:	
Number	2
Value	$1,015
Swine:	
Total number	2,560
Mature hogs	1,365
Spring pigs	1,195
Value	$24,313
Sheep:	
Total number	272,374
Rams, ewes, and wethers	263,963
Spring lambs	8,411
Value	$1,391,386
Goats:	
Number	24
Value	$125
POULTRY AND BEES.	
Number of poultry of all kinds	40,498
Value	$25,034
Number of colonies of bees	....
Value	....

YELLOWSTONE COUNTY.

Yellowstone, the most important and populous of the counties in the Yellowstone valley, was created February 26th, 1883, and named for the Yellowstone river which crosses it from the western to the eastern boundary. The Big Horn river forms a part of the eastern boundary, and mountain ranges in the south, west, and north afford protection and modify the climate. During the past five years the average temperature for December, January and February has been 29 degrees above zero. Spring opens early; and plowing and planting is commonly done before the rainy season, April, May and June, in which months half of the annual rainfall of over 15 inches falls. The long days of sunshine are ideal for the growing and maturing and harvesting of crops.

The rural industries are stock raising and farming. Yellowstone county has long been noted for the number and excellence of its live stock, and great quantities of wool and numerous cars of cattle and sheep are annually shipped. In addition to raising live stock another phase of the live stock industry has assumed large importance, viz., the feeding and fattening of cattle and sheep for the market. Hog raising is also being very profitably pursued. The conditions are ideal for dairying.

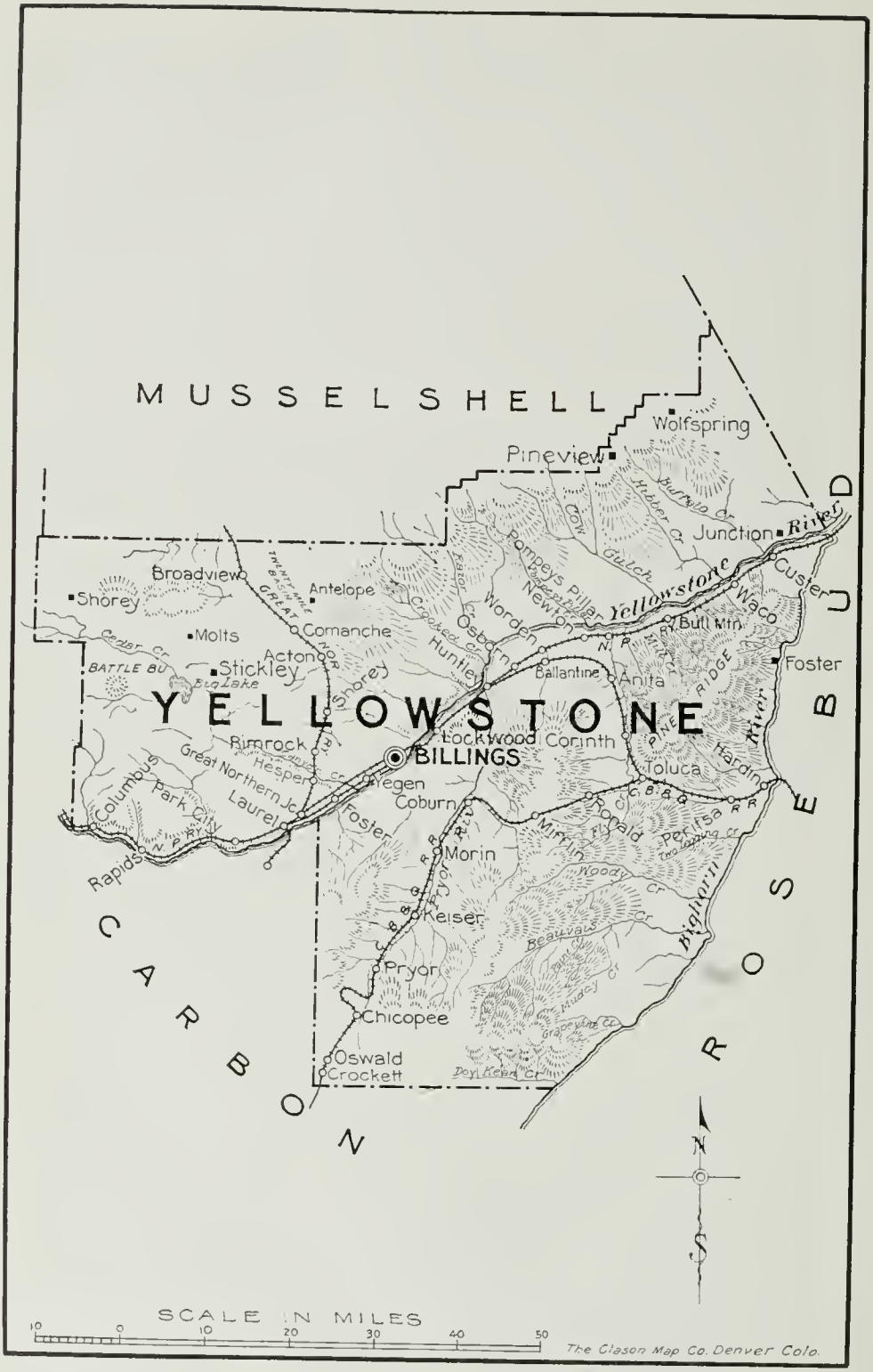
Farming is of irrigated and non-irrigated lands. The Yellowstone valley is extensive and about 268,000 acres are under irrigation in this county. Irrigated lands may be purchased at from $35 to $50 an acre on the newer projects and $75 to $150 under the older ditches. In other chapters are accounts of the Billings Carey Act project and of the Huntley reclamation project.

From the Census Bulletin, "Statistics of Agriculture—Montana," the following figures are taken:

PRINCIPAL CROPS IN 1910.

Crop.	Acres.	Production. (Bushels)	Crop.	Acres.	Production. (Tons)
Corn.....	952	23,845	Hay and forage, total	35,801	94,107
Oats.....	15,591	463,651	Timothy alone	846	1,123
Wheat....	8,535	153,977	Timothy and clover mixed....	242	409
Barley....	901	12,375	Alfalfa	22,905	79,545
Rye.....	31	478	Other tame and cultivated grasses (exclusive of clover alone)	746	1,050
Flaxseed..	168	1,278			
Dry Peas..	....	30			
Potatoes..	2,066	292,232	Grains cut green	1,458	1,596
			All other hay and forage.....	9,604	10,384

Average yields of land in the irrigated districts are uniformly high. Alfalfa and sugar beets are the great crops in the valley, the yield of the former being 3 to 6 tons an acre and of the latter from 10 to 20 tons. Oats yield from 50 to 90 bushels per acre, wheat from 40 to 60, and corn from 30 to 50 bushels. Barley of the first malting variety is grown. Potatoes yield from 200 to 400 bushels to the acre, and the largest known yield from one acre, 1,213 bushels, was made near Laurel in this county. Vegetables of various kinds do well and are grown successfully for shipment to distant points. Berries are very profitable; apples do splendidly


MUSSELSHELL
Wolfspring
Pineview
Buffalo Cr
Huber Cr
Cow Gulch
Junction
River
Custer
Broadview
Shorey
Antelope
Pompeys Pillar
Newton
Yellowstone
Waco
Bull Mtn
Comanche
Molts
Cedar Cr
Acton
Stickley
BATTLE BU
Bug Lake
Osborn
Worden
Hunley
Ballantine
Anita
Foster
YELLOWSTONE
Rimrock
Lockwood
Corinth
BILLINGS
Toluca
Hardin
Hesper
Great Northern Jc
Columbus
Park City
Laurel
Rapids
Vegen
Coburn
Foster
Morin
Ronald
Perkins
Keiser
Pryor
Chicopee
Oswald
Crockett
Beauvais
Bighorn
CARBON
ROSEBUD
N
S
SCALE IN MILES
10 0 10 20 30 40 50
The Clason Map Co. Denver Colo.

first prize for the best display made by a woman homesteader, first for sheaf flax, second for alfalfa and third for barley; Dr. W. X. Sudduth won second prize for wheat, flax and field peas and third for durum wheat and beans. In the sweepstakes the county won three of the five first prizes. At the great New York Land Show in 1911, Dr. W. X. Sudduth won the cup for alfalfa.

In the northwestern part of the county is the Lake Basin country, a very extensive region in which many new settlers are growing successful crops by dry farming methods. The Broadview district is another important dry farming section which has made displays at the State Fair which have attracted much attention. From every part of the county came reports of large yields in 1912.

The record yield of potatoes has been referred to. In the same neighborhood E. B. Lutes raised and brought to Laurel a pumpkin that weighed 79½ pounds. F. W. Schauer left at the office of the Laurel Sentinel an apple that measured 12 inches in circumference. On his ranch near Billings Robert Steel threshed fifty acres of oats that yielded 105 bushels to the acre. Each bushel weighed 48 pounds, and computed at the legal weight of 32 pounds to the bushel the yield was 157 bushels to the acre.

The Northern Pacific railroad's main line follows the Yellowstone river across the county and branch lines extend from Billings via Laurel to Red Lodge and Bridger, Carbon county. The Billings & Northern division of the Great Northern runs north to Great Falls. Communications with Omaha, Denver, points on the Crow reservation, and northern Wyoming is offered by the Burlington system. From the Musselshell valley the Milwaukee is expected to build a branch line to Billings. A branch to Columbus is also a possibility. Announcement was made in February, 1913, that a road would be built north from Billings over the bench lands for a distance of about 20 miles.

The chief towns are Billings and Laurel. Others are Huntley, Ballantine and Hardin in the Huntley project; Park City in the Yellowstone valley which is surrounded by a highly improved farming region, and Columbus in the same section which is a prosperous place with large stores, bank, newspaper, and is the trading point for the Stillwater valley to the south and the rapidly developing Lake Basin country on the north; and Broadview and Comanche on the Billings and Northern division of the Great Northern railroad in a part of the county that has been transformed in the past few years from a stock range to a farming region.

Laurel is an example of how towns grow in Montana. A few years ago the population was about 200 and today it is about 1,500. It is surrounded by a fertile and extensive district of irrigated lands and its trade extends back to the bench lands that are being converted into farms. It is located opposite the mouth of Clark's Fork river whose valley is one of the most productive in Montana. Laurel is a very important railroad point and is on the Northern Pacific, the Burlington and the Great Northern

and many orchards have been set out. Fruit growing is an increasing industry and the products of the orchards sell for a large sum annually.

The Yellowstone valley is the chief sugar beet growing district of the State. Sugar beets yield enormously and have a high per cent of saccharine strength. At Billings is the only beet sugar factory in the northwest which, it is said, produced in 1911 60,000,000 pounds of granulated sugar and paid to farmers $1,200,000 for 185,000 tons of sugar beets. The beets are contracted for in advance and are paid for on a basis of sugar content, many raisers receiving as much as $7.50 a ton. The tops and pulp are fed to live stock. In 1912 the output of the factory is said to have increased and the payment to farmers to have reached about $1,500,000. There is need for increased capacity in the Billings factory and at least one other large sugar factory could be supplied with beets in the district that ships to Billings.

In 1911 on 640 acres of land ten miles west of Billings, I. D. O'Donnell, following diversified farming and stock raising and feeding, had net profits of $2,445.00 on his ranch account, $6,708.99 on his beet sugar account, and $4,261.45 on his sheep account, a total net profit for his farm of $13,415.35.

Away from the valleys and the irrigated districts farming is carried on without irrigation and is called upland farming or dry land farming. A table of crop yields at the experiment farm in Yellowstone county, which was established on land typical of millions of acres in this section of Montana, will be found on another page. Individual farmers have made as good crops. Concerning the unirrigated farm lands of Yellowstone county a pamphlet isued by the Billings Chamber of Commerce says:

The staple crop is winter wheat, which yields abundantly and is of excellent quality. Spring crops such as flax, durum wheat, speltz, oats and barley do well. Alfalfa produces without irrigation as good a crop as clover in the eastern states and is the staple forage plant. Alfalfa seed grown on the uplands of eastern Montana has been pronounced superior to all other alfalfa seed by the Department of Agriculture at Washington. Alfalfa seed is better and grain grown on the uplands under non-irrigated methods is heavier and more nourishing than what is grown under other conditions. Yields of grain from commercial or large fields have frequeutly shown large returns—oats, 80 bushels per acre; wheat 53 bushels; flax, 15 bushels; speltz, 40 bushels; corn, 30 bushels. Wheat from the non-irrigated sections of this county in competition with the world at the International Dry Farming Congress at Cheyenne, Wyo., took sweepstakes prize. The vegetables grown on non-irrigated land are of excellent flavor, quality and the yields are large. Potatoes are a staple crop. Fruit does well when given the proper care and attention.

At the present time wonderful opportunities are offered the farmers on the non-irrigated farm lands in the way of stock raising. Nearly everywhere, in the vicinity of the non-irrigated cultivatable lands in Yellowstone county, there is some good grazing land for pasturing the dairy herd, the extra horses, a bunch of beef cattle or a few sheep. The farmer can graze his stock in summer and feed them in winter the grain and other produce he raises thus increasing the revenue of his ranch several fold.

Yellowstone county dry land products have won many prizes at expositions. At the Dry Land Congress of 1908, W. B. George won the silver cup for the best 25 pounds of wheat. Miss Mabel Sudduth won

railroads. New railroad shops and roundhouses have recently been built at Laurel at a cost of $3,000,000 and the railroad pay roll is a large one. There are good schools, six churches, two banks, a creamery, two newspapers, water and sewer systems of recent construction, and many business houses.

Billings, the county seat, is the center of an irrigated area of approximately 500,000 acres and of non-irrigated farming country of 1,000,000 acres, ships great quantities of live stock, wool, hides and grain, is the headquarters for 160 traveling salesmen and of numerous branch houses of large firms, has many jobbing houses, and wholesale and retail stores. There are seven banking houses, numerous churches, good public schools, a polytechnic institute representing an investment of $200,000, costly society buildings, two daily newspapers, and all the conveniences and improvements of an up-to-date city. Billings has numerous manufacturing establishments, the most important being the beet sugar factory which pays out annually about $1,500,000 in payment for beets. Hydro-electric power is abundant and 50,000 horse power is now available. The population was 3,221 in 1900 and 10,031 in 1910, an increase of 211 per cent. The people of Billings are noted for their public spirit and enterprise. The Polytechnic Institute, built by contributions from citizens, is a just source of pride. President Taft said, when he visited Billings:

"I haven't seen all of Montana, but from the sample I have seen I think it justifies the enthusiasm which the people of Montana have for its future. This part of Montana is the center of the new agriculture of the West."

The area of Yellowstone county when the census was taken in 1910 was 5,729 square miles and the population was 22,944, an increase of 269 per cent since 1900. Since that date a considerable part of the population and about half of the acreage have been put in Musselshell and Big Horn counties, but Yellowstone county retains the most populous towns and farming districts of the old county and a large and only partly developed area. The number of voters registered in 1912 was 5,132. The statistics from the census are for the individual county as are figures for the total valuations in 1910. Musselshell county was created in 1911 and the assessed valuations in Yellowstone county for that year are lessened on that account. The valuations for 1912 include the part of Big Horn county that was taken from Yellowstone county.

Assessed valuations for the last three years were as follows: $20,187,465 in 1910; $17,976,666 in 1911; and $20,788,722 in 1912. At the last assessment real estate and improvements were valued at $12,463,187, and personal property at $4,773,843. Horses of all classes numbered 8,932, valued at $477,025; cattle of all kinds 25,609 head, valued at $545,503; sheep 292,240, valued at $714,087; and hogs of the value of $8,624. The acres of land assessed numbered 852,214 acres, the average valuation being $7.24 per acre. Three telegraph companies had 1,603 miles of line and three telephone companies 2,854 miles of wire. The mileage of railroads was 284.

July 1, 1912, there were 362,923 acres of surveyed and 184,000 acres of

unsurveyed, unappropriated public land in the Billings land district, and 21,828 acres of surveyed, unappropriated public land in the Bozeman land district.

Secretaries of Commercial Clubs at Billings, Columbus, Huntley, Laurel, Park City and Worden will furnish further information about opportunities in Yellowstone county, on request.

FARMS AND FARM PROPERTY IN 1910, COMPILED FROM U. S. CENSUS REPORT.

Population	22,944
Population in 1900	6,212
Number of all farms	1,812
Number of all farms in 1900	383
Color and nativity of farmers:	
Native white	1,386
Foreign-born white	352
Negro and other nonwhite	74
Number of farms, classified by size:	
Under 3 acres	19
3 to 9 acres	9
10 to 19 acres	35
20 to 49 acres	218
50 to 99 acres	268
100 to 174 acres	908
175 to 259 acres	88
260 to 499 acres	168
500 to 999 acres	53
1,000 acres and over	46
LAND AND FARM AREA.	
Approximate land area—acres	3,666,560
Land in farms—acres	1,215,046
Land in farms in 1900—acres	1,184,916
Improved land in farms—acres	240,288
Improved land in farms in 1900—acres	58,024
Woodland in farms—acres	64,362
Other unimproved land in farms—acres	910,396
Per cent of land area in farms	33.1
Per cent of farm land improved	19.8
Average acres per farm	670.6
Average improved acres per farm	132.6
VALUE OF FARM PROPERTY.	
All farm property	$21,859,322
All farm property in 1900	$5,371,548
Per cent increase, 1900-1910	306.9
Land	$15,184,367
Land in 1900	$2,238,300
Buildings	$1,519,936
Buildings in 1900	$353,810
Implements and machinery	$640,612
Implements, etc., in 1900	$116,900
Domestic animals, poultry, and bees	$4,514,407
Domestic animals, etc., in 1900	$2,642,538
Per cent of value of all property in—	
Land	69.5
Buildings	7.0
Implements and machinery	2.9
Domestic animals, poultry, and bees	20.7
Average values:	
All property per farm	$12,064
Land and buildings per farm	$9,219
Land per acre	$12.50
Land per acre in 1900	$1.91
DOMESTIC ANIMALS. (Farms and ranges)	
Farms reporting domestic animals	1,600
Value of domestic animals	$4,459,254
Cattle:	
Total number	30,267
Dairy cows	3,579
Other cows	10,255
Yearling heifers	3,735
Calves	3,006
Yearling steers and bulls	2,981
Other steers and bulls	6,711
Value	$935,314
Horses:	
Total number	12,863
Mature horses	10,499
Yearling colts	1,577
Spring colts	787
Value	$1,288,349
Mules:	
Total number	331
Mature mules	307
Yearling colts	16
Spring colts	8
Value	$49,195
Asses and Burros:	
Number	4
Value	$1,650
Swine:	
Total number	6,595
Mature hogs	3,820
Spring pigs	2,775
Value	$56,300
Sheep:	
Total number	408,211
Rams, ewes, and wethers	370,016
Spring lambs	38,195
Value	$2,128,368
Goats:	
Number	18
Value	$78
POULTRY AND BEES.	
Number of poultry of all kinds	62,526
Value	$44,351
Number of colonies of bees	1,720
Value	$8,302

Labor Report.

Article XVIII of the State Constitution provides for the establishment of a Bureau of Agriculture, Labor and Industry; the appointment of a commissioner; prohibits contract labor. and the employment of children under sixteen in mines; provides for an eight-hour day for state, county and municipal work and for work in mills, smelters and mines, and requires the legislature to provide for the enforcement of the Article. The Third Legislative Assembly established the bureau and in addition to the provisions named other functions have been added including the publication of statistics, compiling a census of the children of the state, enforcing the child labor laws, and the advertising of the resources of the state.

The office force consists of the commissioner, chief clerk, and one stenographer in the Bureau of Agriculture, Labor and Industry, and an assistant clerk and one stenographer in the Publicity Department.

The bureau has a valuable library composed in part of the publications of the national bureaus and departments and publications from other states and foreign countries received in exchange for the reports of the bureau.

The labor laws of Montana are not printed in separate form and it has been necessary in many cases to copy sections from the Codes and Session Acts in order to give the desired information to inquirers concerning questions of law with reference to labor. Careful attention has been given to correspondence concerning the rights of labor. The commissioner has personally filed complaints and served as prosecuting witness against all persons and corporations when he had reliable information that they had violated the prohibitions against child labor. As a rule the defendants pleaded guilty and paid their fines. Convictions were obtained in all cases that came to trial, except one. That case was first tried in the justice court and the defendant was found guilty and fined. The case was appealed and tried in the district court without notice to the commissioner of the time of the trial.

The annual school census reports are carefully transcribed and filed in compliance with the law requiring the bureau to compile and preserve, for the official record of the age of children in the state, a full and complete list of the name, age, date of birth and sex of each child and the names of their parents or guardians. This data is kept for the entire state by counties by a card index file system with the names in alphabetical order making it easy in a few moments to find the data for any child whose name appears on the census report of any school district in Montana. The bureau has the only complete list of the census of all the children in the state. The official list is used for the

purpose of giving information on request to truant officers, to the Bureau of Child and Animal Protection, to employers of child labor, and by the bureau in accordance with the following provisions of the Revised Codes.

PROHIBITIONS AGAINST CHILD LABOR.

Sec. 1746. Employment of Children Under Sixteen Years in Certain Occupations Prohibited.—Any person, company, firm, association, or corporation engaged in business in this state, or any agent, officer, foreman or other employee having control or management of employees, or having the power to hire or discharge employees, who shall knowingly employ or permit to be employed any child under the age of sixteen years, to render or perform any service or labor, whether under contract of employment or otherwise, in, on, or about any mine, mill, smelter, workshop, factory, steam, electric, hydraulic, or compressed air railroad, or passenger or freight elevator, or where any machinery is operated or for any telegraph, telephone or messenger company, or in any occupation not herein enumerated which is known to be dangerous or unhealthful, or which may be in any way detrimental to the morals of said child, shall be guilty of a misdemeanor and punishable as hereinafter provided.

Sec. 1747. Liability of Parent.—Any parent, guardian, or other person having the care, custody or control of any child under the age of sixteen years, who shall permit, suffer or allow such child to work or perform service for any person, company, firm, association or corporation doing business in this state, or who shall permit or allow any such child over whom he has such care, custody or control, to retain such employment as is prohibited in Section 1746 (1) of this act, whether under contract of employment or not, shall be guilty of a misdemeanor and punishable as hereinafter provided.

Sec. 1748. Record of Children Under the Age of Sixteen Years.—The Commissioner of the Bureau of Agriculture, Labor and Industry shall compile and preserve in his office from reports made to him by the County Superintendent of Schools, as otherwise provided, a full and complete list of the name, age, date of birth and sex of each child, and the names of the parents or guardians of each child under the age of sixteen years who is now or many hereafter become a resident of this state, and such list shall be the official record of the age of children in this state.

Sec. 1749. Age Certificates.—Upon attaining the age of sixteen years any child may make application to the Commissioner of the Bureau of Agriculture, Labor and Industry for an age certificate, which must be presented to any employer with whom such child may seek employment. The employer, if such employment be given, must countersign the certificate and return the same of the commissioner of said bureau, who shall keep the same on file in his office. Any person, firm, company, association or corporation who employs or permits to be employed in

any occupation prohibited in Sec. 1746 (1) of this act, any child without such certificate showing the child to be at least sixteen years of age, shall be guilty of a misdemeanor and punishable as hereinafter provided, should such child prove to be less than sixteen years of age.

Sec. 1750. Enforcement of Act.—To enforce this act the Commissioner of the Bureau of Agriculture, Labor and Industry, the Bureau of Child and Animal Protection and all county attorneys shall, each upon their own volition, or upon the sworn complaint of any reputable citizen that this act is being violated, make prosecutions for such violations.

Sec. 1751. Penalties.—Every person, firm, company, association or corporation who violates any of the provisions of this act shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than twenty-five dollars nor more than five hundred dollars, or by imprisonment in the county jail for a period of not less than thirty days nor more than six months, or by both such fine and imprisonment.

Sec. 1752. Prohibiting Employment of Children in Mines.—Any person, corporation, stock company or association of persons, owning or operating any underground mine, or any officer, agent, foreman or boss, having the control or management of employees, or having the power to hire or discharge employees, who shall employ, or knowingly permit to be employed, any child under the age of sixteen years, for work or service in any such mine, or the underground workings thereof, or permit or allow any such child to render or perform any work or service whatever in such mine, whether under contract of employment or otherwise, shall be guilty of a misdemeanor and punishable as hereinafter provided.

Sec. 1753. Parent Permitting Employment Guilty of Misdemeanor.—Any parent, guardian or other person having the care, custody or control of any child under the age of sixteen years, who shall permit, suffer, or allow such child to work in any mine having underground workings, or who shall permit or allow any such child over whom they may have care, custody or control to retain employment in any such mine, or who after having knowledge that any such child has taken employment in any such mine, or is performing work or service therein, whether under contract of employment or not, shall fail forthwith to notify the person or corporation owning or operating such mine, or some officer, foreman or employee thereof having the power to hire or discharge employees, of the age of such child, shall be guilty of a misdemeanor and punishable as hereinafter provided.

Sec. 1754. Penalties.—Any person or corporation violating any of the provisions of this act shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine not less than twenty-five ($25) dollars nor more than five hundred ($500) dollars, or by imprisonment in the county jail for a period of not less than thirty days nor more than six months, or by both such fine and imprisonment.

Sec. 8349. Employment of a Child in a Mine.—Every person who receives or employs any child under fourteen years of age in any underground works or mine, or in any similar business, is punishable by a fine not exceeding one thousand dollars.

SESSION ACTS.

The following laws enacted by the Twelfth Legislative Assembly are of interest to labor:

Chapter 15, Section 1. That Section 288 of the Revised Codes of 1907 be amended so as to read as follows: Section 288. It is the duty of the common council of any incorporated city of the first or second class within this state, and it shall be lawful for the common council of any incorporated city other than a city of the first or second class within this state, to provide for the establishment of a free public employment office to be conducted on the most approved plans, and to provide for the expenses thereof out of the revenues of the city in which the same is established. The annual report of the Commissioner of Agriculture, Labor and Industry shall contain a detailed account of the transactions of all free employment offices within this state, showing the number of applicants for help, the number of applicants for employment, male and female, the number securing employment through said office, and the expenses thereof.

Chapter 21, Section 1736. The period of employment of working men in all underground mines or workings, including railroad or other tunnels, shall be eight (8) hours per day, except in cases of emergency where life and property is in imminent danger.

Chapter 29, Section 1. Every person or corporation operating a railroad in this state shall be liable in damages to any person suffering injury while he is employed by such person or corporation so operating any such railroad, or, in case of the death of such employe, instantaneously or otherwise, to his or her personal representative, for the benefit of the surviving widow or husband and children of such employe; and, if none, then of such employe's parents; and, if none, then of the next of kin dependent upon such employe, for such injury or death resulting in whole or in part from the negligence of any of the officers, agents or employes of such person or corporation so operating such railroad in or about the handling, movement or operation of any train, engine or car, on or over such railroad, or by reason of any defect or insufficiency, due to its negligence, in its cars, engines, appliances, machinery, track, roadbed, works, boats, wharves or other equipment.

Section 2. In all actions hereafter brought against any such person or corporation so operating such railroad, under or by virtue of any of the provisions of this act, the fact that the employe may have been guilty of contributory negligence shall not bar a recovery, but the damages shall be diminished by the jury in proportion to the amount of negligence attributable to such employe; Provided, that no such employe who may

be injured or killed shall be held to have been guilty of contributory negligence in any case where the violation by such person or corporation so operating such railroad of any statute enacted for the safety of employes contributed to the injury or death of such employe.

Section 3. An employe of any such person or corporation so operating such railroad shall not be deemed to have assumed any risk incident to his employment when such risk arises by reason of the negligence of his employer or of any person in the service of such employer.

Section 4. Any contract, rule, regulation or device whatsoever, the purpose or intent of which shall be to enable any such person or corporation so operating such railroad to exempt itself from any liability created by this act shall, to that extent, be void; Provided, that in any action brought against any such person or corporation so operating such railroad, under or by virtue of any of the provisions of this act, such person or corporation may set off therein any sum it has contributed or paid to any insurance, relief benefit, or indemnity that may have been paid to the injured employe, or the person entitled thereto, on account of the injury or death for which said action is brought.

Chapter 32, Section 1. It shall hereafter be unlawful for any person engaged in the trade of buying and selling any goods, wares or merchandise or article or thing, to knowingly exhibit or sell or offer for sale any goods, wares, merchandise, article or thing which shall have been produced or manufactured or made by convict labor in any prison, unless such goods shall have plainly stamped or marked thereon the words "prison made."

Section 2. Any person or persons who shall knowingly sell or offer for sale any goods, wares or merchandise, article or thing produced, made or manufactured in any prison which said goods, wares, merchandise, article or thing shall not have stamped or marked thereon the words "prison made" shall, upon conviction thereof, be deemed guilty of a misdemeanor and shall be punishable by a fine of not less than twenty-five dollars or more than three hundred dollars, or by imprisonment in the county jail of not less than thirty days or more than ninety days, or by both such fine and imprisonment.

Chapter 56, Section 1. From and after the passage of this act, no person, company, corporation or association shall establish or conduct the business of wage broker within the state of Montana, unless such person, company, corporation or association, shall have first procured a license from the proper authorities as hereinafter provided, and shall have executed a bond in such a sum as said authorities may require for the faithful carrying out of the provisions of this act, and of the ordinances of any town or city in which such business may be carried on.

Section 2. The board of county commissioners of any county in this state, or, in case said business be carried on in any incorporated city or town, the city council or board of trustees of said city or town, may in their discretion from time to time grant license to any person or persons,

company, corporation, or association to conduct or carry on the business of wage broker upon payment of such sum thereof and upon such terms and conditions as the said board of county commissioners or city council or board of trustees shall by resolution or ordinance require.

Section 3. Any person, company, corporation or association parting with, giving or loaning money, either directly or indirectly to any employee, or wage earner, upon the security of, or in consideration of any assignment or transfer of wages or salary of such employee, or wage earner, shall be deemed to be a wage broker within the meaning of this act.

Section 4. No assignment of his or her wages or salary by any employee or wage earner to any wage broker for his or her benefit shall be valid or enforceable, nor shall any employer or debtor recognize or honor such assignment for any purpose whatever, unless it be for a fixed and definite part or all of the wages or salary theretofore earned.

Section 5. No wage broker shall ask, demand or receive, either as compensation or interest, or in any other manner, directly or indirectly, any compensation or interest for the use of money advanced or loaned by him to any employee or wage earner in excess of twelve per cent per annum, and said compensation or rate of interest shall be computed upon the amount actually advanced to, and received by, the employee or wage earner and shall include all commissions or compensation whatsoever to the wage broker or any other person for making or procuring said loan.

Section 6. No assignments of his wages or salary to a wage broker by a married man who shall have a wife residing in this state, shall be valid or enforceable without the consent of his wife evidenced by her signature to said assignment executed and acknowledged before a notary public or other officer empowered to take acknowledgments, and no wage broker or person connected with him directly or indirectly shall be authorized to take any such acknowledgments.

Section 7. No assignment of wages or salary to a wage broker shall be valid or enforceable unless notice in writing of the same accompanied by a copy of the assignment shall be given to the employer within one day from the date of its execution; and all assignments shall be filed in the office of the county clerk of the county where the assignor resides, and no assignment shall be valid unless so filed.

Section 8. Every purchase by a wage broker of an assignment of the wages or salary of any employee or wage earner, shall be held and considered a loan, in the sum of the amount actually paid to and received by such employee or wage earner, and shall be subject to all the provisions of this act.

Section 9. Any person, company, corporation, or association and any officer, member, agent or employee thereof violating any or either of the provisions of this act, shall be deemed guilty of a misdemeanor, and upon conviction shall be liable to a fine in the sum of not less than one hundred ($100.00) dollars nor more than five hundred ($500.0) dollars

for each offense, or to imprisonment in the county jail for a period of not to exceed ninety days; or both.

Section 10. Any note, bill or other evidence of indebtedness and any assignment of wages or salary given to or received by any wage broker in violation of any of the provisions of this act shall be void, as against the creditors of the assignor or transferor.

Chapter 80, Section 1. It shall be unlawful for any person, persons, association or corporation, to knowingly expose for sale or sell within the state of Montana, without first having obtained from the Secretary of State a license to sell any coal as hereinafter provided.

Section 2. Every person, persons, association, or corporation desiring to act as agent for or to sell at retail coal within the limits of the state of Montana, shall make an application in writing to the Secretary of State, setting forth his or their residence, together with the names of two or more responsible citizens of the state of Montana as references.

Section 3. The Secretary of State shall thereupon issue a license for such applicant for one year, except as hereinafter provided, which license shall set forth the name of the person, persons, association or corporation, and be kept conspicuously posted in his, their or its place of business.

Section 4. Every person, persons, association, or corporation shall pay annually, upon the issuance of such license as hereinbefore provided, the sum of one dollar ($1.00) to the Secretary of State as a license fee.

Section 5. Licenses shall be for one year unless revoked as subsequently provided herein.

Section 6. In all sales of coal the seller must give to the purchaser full weight at the rate of two thousand pounds to the ton.

Section 7. The Secretary of State shall have power to revoke the license of any person, persons, association or corporation upon conviction of a second violation of any law regulating the sale of coal within the state of Montana; but no such revocation shall be made until due notice to the person, persons, association or corporation so complained of, is given; and for the purpose of this section the said Secretary of State, or his authorized agents, shall have power to administer oaths and compel the attendance of persons, and the production of books, papers, etc.

Section 8. No person, association or corporation shall be permitted to misrepresent to the public respecting any coal offered for sale, nor to sell coal of any particular name or from any particular mine under the name or designation of another coal or mine.

Section 9. Any person offending against the provisions of this act shall be guilty of a misdemeanor, and upon conviction thereof shall be sentenced to pay a fine not exceeding five hundred dollars ($500.00), and not less than fifty dollars ($50.00), or to be imprisoned for a term not exceeding six months in the county jail, or by both such fine and imprisonment.

Chapter 89. Section 1. It shall be unlawful for any sheriff, constable, police officer or any persons charged with the custody of any one accused

of crime, of whatever nature, or with the violation of a municipal ordinance, to frighten or attempt to frighten by threats, torture, or attempt to torture, or resort to any means of an inhuman nature, or practice what is commonly known as the "third degree' in order to secure a confession from such person

Section 2. A violation of the provisions of Section 1 of this act shall constitute a misdemeanor, and shall be punishable by a fine not exceeding five hundred ($500.00) dollars, or by imprisonment in the county jail not exceeding six months, or by both such fine and imprisonment.

S. B. 54. A state sealer of weights and measures bill.

H. B. 310. A bill establishing the "Montana State Tuberculosis Sanitarium" for the treatment of tuberculosis and miner's consumption.

CHILD LABOR LAW.

(For full text of the law see Revised Codes, Sections 1746-1754.)

Essential Points.

Children under 16 years of age must not be permitted to work:

1. In or about any mine, mill or smelter.
2. Workshop or factory.
3. Steam, electric, hydraulic or compressed air railroad.
4. Passenger or freight elevator.
5. Where any machinery is operated.
6. For any telegraph, telephone or messenger company.
7. In any occupation dangerous or unhealthful.
8. In any occupation detrimental to morals.
9. Age certificate necessary.

OPINIONS OF COURTS AND EXPERTS.

Importance of Prolonged Infancy of Child.

"All students of sociology are practically agreed that it was the prolonged infancy of the human child that made civilization possible. The long period during which the child is non-productive has been the condition sine qua non of the evolution of human beings; and this for two reasons: first, the prolonged state of dependence has elicted the tenderer traits, the capacity for self-sacrifice, in the parents. Without the children pulling at our heart-strings we should still be savages today. Without the qualities of generosity and self-sacrifice, no civilization is worth having.

"In the next place, the prolonged exemption of the child from productive industry has been the means of securing to it the opportunity of physical growth and of mental preparation for the later work of life."—Adler F., "Child Labor a Menace to Civilization."

Drawbacks to Child Labor.

"The drawbacks to child labor are that children are deprived of pleasure and freedom in the open air, and are subjected to monotonous life when they ought to have variety. The physical effects are those of degeneracy, as seen in stunted growth and impaired nutrition, while of the moral effects illiteracy and its consequences are the more immediately apparent."—Oliver, Thos., "Diseases of Occupation."

False Sympathy.

"A third motive is false sympathy. The wages of the little children, it is

said, are necessary to complete the income required by the family. And from this point of view it seems unfeeling to deprive the parents of that increment to their revenue which can be furnished by the little hands. This argument, however, is based upon a failure to see that if the earnings of the children were withdrawn, in the long run the adult-wage would rise. It is true that in the period of transition before this appreciation could take place, there would be suffering. But is it not the duty of society in general to come to the rescue at this point and to minimize the evils that are always involved in any passage from a lower to a higher stage?"—Proceedings of the Seventh Annual Conference on Child Labor, page 4.

Need of Wage to Family.

"Another point always brought out is the need of the wage to the family. Of course, I am bitterly opposed to the idea that the children of men and women should support them. And it is a very significant fact that it is only the human race that lives off the earnings of its young.

'No fledgling scratches for the hen,
No kitten mouses for the cat.'

"It is only the human family that lives off the earnings and the wages of its own little children."—Same, page 75.

Child Labor an Injury to Both Child and Parent.

"If, however, the children now at work in various countries were removed from the labor market, it would not only promise a much better generation to succeed the present, but it would also provide for all the unemployed the world over who are willing to work. Child labor is an injury both to the child and to its parents. Many fathers are actually pauperized by the wages of their children, and many a child who commences to work too early and under conditions too severe, turns out to be a future tramp or a drunkard."—Smith, S. G., "Social Pathology."

Child Labor Reduces Wages of Adults.

"The direct effect of child labor upon the family income follows the recognized tendency of the cheaper article to drive the better from the market. A comparison of wages in industries that utilize child labor with industries demanding only adult labor shows that the total income of the family in the former, as in the silk and cotton factories, cheap cigar and tobacco factories, and the unskilled departments of the glass and coal mining industries, it not equal to the income of the family in the trades—iron and steel, bridge building, railroad and lumber industries—where only adult members of the family are employed."—Bliss, W. D. P., "The Encyclopedia of Social Reform."

Danger in Running Elevators.

"Like most of our modern devices for annihilating time and space the elevator operates at a heavy cost. . . . Elevators seem to offer a peculiar temptation to recklessness. . . . The others had no business trying to run the elevators. It is all true, but they were children. We are too likely to think that a laborer must be grown up. We might expect that ten hours' work a day would take the nonsense out of any boy, but it doesn't. These very boys, full of mischief and daring in dangerous work shops, the boys who get hurt, are first cousins to the boys who, notwithstanding all the trouble they make, are most prized and most loved in the school."—Benedict, Crystal Eastman, "Work-Accidents and the Law; the Pittsburg Survey."

Why Persons Under 21 Should Not Be Employed in Night Messenger Service.

"The National Child Labor Committee has made a special inquiry into the conditions surrounding the night messengers in a large number of our cities during the past two years. While we were aware that these conditions were bad,

we were not prepared for the really revolting facts our inquiry revealed. In the day time the messenger boy's work consists of the unobjectionable task of delivering telegrams about the city, but after nine o'clock at night the character of his duties undergoes a radical change; from that time on until two or three o'clock in the morning his work is almost exclusively the running of errands in connection with the three great evils of gambling, drink and prostitution. Calls come to the messenger offices over the telephone from hotels, drug stores and saloons, asking that messenger boys be sent at once to where the patrons await them. No inquiries are made by the office as to the character of the work to be done nor the destination of the boy. The patron is free to use the boy as he sees fit and to retain his services for as long a period as is desired, paying the boy at a fixed rate per hour or for the errand if it required but a short time. Prostitutes call in messenger boys to perform for them a surprising variety of services. The boys get them chop-suey, chile-con-carne, liquor, tobacco, opium, medicines and articles used in their trade, deposit their money in the bank, and one instance was found in which a boy was actually required by a prostitute to clean up her room and to make her bed. In responding to a call the messenger not only enters the house of prostitution, but usually goes into up stairs rooms where the inmates tell him of the work they wish to have done, and so these boys are drawn into close association with denizens of the underworld."—Proceedings of the Seventh Annual Conference of Child Labor, page 103.

EMPLOYERS' LIABILITY LAW IS CONSTITUTIONAL.

The Supreme Court of the United States has upheld the constitutionality of the Employer's Liability Act, passed by congress in 1908, in all cases before it. The Supreme Court also decided that state courts may enforce the act when local laws are appropriate. It will be remembered that the first law, enacted in 1906, was declared unconstitutional in 1908 because it included within its provisions a regulation of intrastate commerce as well as interstate. Immediately following that decision another bill was introduced in congress covering these defects and became a law; two years later an amendment was added (known as the Bailey amendment), which was followed by litigation in order that a final decree might be obtained from the United States Supreme Court. In this decision the attempt of congress to change the old common law rule (that an employe of a common carrier could not procure damages from the carrier for injuries received in his employment when the injuries resulted from the negligence of a fellow servant) has been successful. The decision of the court was unanimous. Justice Van Devanter asserted that congress had the right to regulate the relation of interstate railroads to their employes, and further decided that congress had not gone beyond its power by abrogating the common law rule that an employer was not liable for the injuries to employes resulting from the negligence of fellow servants. "No one has a vested property right in the common law," said Justice Van Devanter. No objection was found in the fact that the act did away with the doctrone of "assumption of risk" by employes, and restricted the doctrine of "contributory negligence."—The Railway Conductor, March, 1912, page 233.

WOKMEN'S COMPENSATION.

A Workmen's Compensation Law was passed by the federal government in 1910 and at present 13 states have Workmen's Compensation Laws. From the report of the Industrial Commission of Wisconsin is quoted the following comments by employers on the Wisconsin law:

Appleton Wire Works, Appleton; G. Buchanan, Secretary.—If our experience during the coming years is anything like what it has been in the past, the cost under the compensation act will be but a small part of what it was while carrying employers' liability insurance.

Ashland Brewing Company, Ashland; Thomas B. Culver, Secretary and Treasurer—The law places us in such a position that in any case where we are at all liable we shall not be pestered by attorneys. Our men seem to be satisfied.

E. I. du Pont de Nemours Powder Company, Wilmington, Del.; J. P. Laffey, Manager Legal Dept.—This company operates plants in over twenty states, including eight which have compensation laws. We are entirely satisfied with the simple compensation type of law and the writer likes the Wisconsin law better than any other to date. We think it would be unwise to attempt amendments at the next session of the legislature. Your law ought to be thoroughly tried out as it is before it is tinkered with.

Joannes Brothers Company, Green Bay.—We are pleased to report that the Wisconsin compensation law has greatly improved former conditions in assuring payment under the law in full to the employes without any expense to either party. We believe after a longer experience that the law will prove a blessing to the employes and the employers in our state.

Montana Commission.

In response to many suggestions and communications, Governor Edwin L. Norris appointed a commission consisting of Judge W. L. Holloway, J. H. Hall, Neill Collins, J. C. Lowney, J. F. McNally, W. F. Meyer, H. G. Miller and C. W. Goodale to draft a bill for the enactment of an employers' liability and workmen's compensation law to be presented to the Twelfth Legislative Assembly. The commission secured copies of all the known laws covering the subject from other states, the federal government and foreign countries and after extensive investigations and many conferences drafted a bill which was introduced as H. B. 315. The bill was referred to the committee on corporations other than municipal, and was finally printed but failed to pass.

Though the work of the commission was without effect, so far as past legislation is concerned, it had a delicate and laborious office to perform and probably paved the way for more satisfactory legislation in the future. In drafting such a bill constitutional limitations must be regarded. The freedom of contract must be guarded and the obligations of contracts must not be impaired. If the workman is compelled to accept automatic compensation for accidents in order to secure employment, there is involved to a certain degree the freedom of contract. The present system is both expensive and wasteful to the employer and it is uncertain and unfair to the employe, but we must recognize the fact that it is difficult to draft and secure the enactment of laws providing a system of just compensation for industrial accidents, that will prove a boon to employer and wage-earner alike.

The effort will be renewed to secure the needed legislation at the next session of the Legislative Assembly.

COLLECTION OF WAGES.

The bureau has had a number of requests from wage-workers, both men and women, to assist them in collecting wages for amounts varying from a few dollars to several hundreds of dollars and as the commissioner had no authority to act in any way, he has always suggested their consulting private counsel in cases where the amounts were sufficient to enable the workmen to pay counsel.

Many of these laborers come from states where the labor commissioner is authorized by law to enforce the statutes governing the employment of children, minors and women and all laws for the protection of wage-workers and they do not understand why the labor commissioner of Montana is not able to protect them. In some cases the complaint of the laborer may be without merit, but there is urgent need for some legislation to protect the wage-earners against the unfair treatment of dishonest employers. Under present conditions, the contractor has every advantage over the wage-earner and he may discharge him at any time and compel him to wait for his wages until the next monthly pay-day, knowing that his expenses will amount to more than the money that is due him and that he will be compelled to secure employment elsewhere and to lose the balance due him from the contractors.

CONDITION OF LABOR.

During the last two years conditions in the state have been very satisfactory from the standpoint of labor and only a few labor troubles of any kind have occurred.

The teamsters of Great Falls asked their employers to increase the wage scale from $3.00 to $3.50 per day and for a wage of $3.25 per day for helpers. The teamsters went out for a short time pending settlement of its differences.

The Building Laborers of Butte made a demand for an increase in wages and shorter hours for Saturdays. Before settlement some jurisdictional questions arose, but after a number of conferences the matter was satisfactorily adjusted.

The Electrical Workers of Missoula were called out and remained out about one month but the difficulty was settled to the satisfaction of all concerned.

There were only a few other minor differences including a question with the electrical, heating and plumbing contractors for the work on the new wings of the Capitol.

As a rule all the strikes and conferences have been conducted in an orderly manner.

In December, 1911, the "Larson Boarding House" in the city of Great Falls was declared unfair and a banner was paraded back and forth in front of the property and an injunction was prayed for in the district

court which was denied. An appeal was taken to the supreme court and the order was reversed and the cause remanded for further proceedings.

FARM LABOR.

According to a report of the Department of Agriculture, wages of farm labor in Montana have steadily risen in recent years. In 1880 the average wages of outdoor laborers, men of Montana farms, hired by the year without board, was $45 per month; it was $40 in 1887; $36.50 in 1890 and $49 in 1909. With board they received $30.50 per month in 1880 and $35 in 1909. Men hired by the season received without board $49 per month in 1878 and $55.08 in 1909. With board they received $35.56 in 1875 and $39.20 in 1909. In 1899, $5,077,340 was paid for farm labor in Montana and $10,930,477 in 1909. The average per farm in 1899 was $390 and in 1909 it was $876. The average per farm laborer in 1899 was $565.

Harvesters, working by the day, received, without board, $2.67 a day in 1880 and $2.58 in 1909. With board they received $2.25 in 1880 and $2.23 in 1909. Other than harvest workers, day labor, received $1.70 a day in 1888 and $2.31 in 1909, without board. With board they received $1.25 a day in 1888 and $2.68 in 1909.

THE MONTANA STATE TUBERCULOSIS SANITARIUM.

The following is descriptive of the State Hospital for the Treatment of Tuberculosis and Miners' Consumption recently opened for the reception and treatment of patients. This institution, so important to the interests of labor, is the result of H. B. 310 prepared and introduced two years ago by Hon. J. E. McNally of Butte, who was not only the author of the measure but continued to work for the enactment of the law with patience, tact and resistless enthusiasm until the timely and beneficent achievement was accomplished. The sanitarium will, in due time, be furnished with buildings and equipment sufficient to provide for the accommodation and treatment of all persons in the state in need of relief from the ravages of the "great white plague." The sanitarium will always stand as a monument to the author of the law and to those who asssisted him in securing the legal provisions for the establishment and maintenance of this new institution which is of so great importance to the health and welfare of the public.

The following article was prepared for the bureau by Dr. Thos. D. Tuttle, superintendent of the sanitarium:

In 1911, the legislature appropriated $20,000 for the purpose of building and equipping a hospital to be known as the "Montana State Tuberculosis Sanitarium." This amount of money was not sufficient to even make a start at erecting an institution of this character. However, the matter was brought to the attention of the Anaconda Copper Mining Company, and these people realizing the need and benefit of such an institution donated the sum of $25,000, which together with the $20,000 appropriated by the state enabled the board of examiners to erect a

very creditable institution, consisting of an executive building with two wings, six cottages, barn and chicken house. The executive building is intended for the office and quarters for the nurses and other help. The wings will accommodate eight patients, and it is the intention to quarter the sicker patients in these wings. The cottages are intended to accommodate two persons each, but they are of sufficient size to enable us to take care of four patients in each cottage, thus making quarters for thirty-two people suffering from tuberculosis.

That such an institution is needed, and needed badly, in this state is shown by the fact that during 1911 there were over 400 deaths reported from tuberculosis. Using the death records for a basis of estimation, the least number of cases existing in the state, at the present time, would be two thousand. These people cannot be taken care of properly at home or at a general hospital. If they are going to receive benefit from treatment, they must have quarters with special provisions for their proper care and treatment.

The care of the individual patient is not the only thing to be considered in regard to such an institution. Every person suffering from tuberculosis is a menace to his neighbors and the providing of a tuberculosis sanitarium enables those suffering from tuberculosis to be properly taken care of and the element of danger removed from the community. It is the experience of other sanitaria that if the cases are taken early, ninety per cent of them can be cured; whereas, if the disease is allowed to reach an advanced stage before the case is sent to the sanitarium, the chances of recovery are very small.

The cost of caring for consumptive patients properly is high, higher than for most other diseases, because of the fact that these people must have the greatest care possible, and their food must not only be abundant, but of the most nourishing character; as an illustration, in buying cows for such an institution, we have to consider, primarily, the quality of the milk given by such cows, letting the quantity to be a secondary consideration.

While this institution is established and is now ready to receive patients, there are a good many things that are needed. Among these is a large central dining room with a second floor converted into a recreation room where the patients can congregate in inclement weather where they can entertain themselves or be entertained. These people are inclined to become depressed, and if allowed to brood over their misfortune, their chances become proportionately less. Such a building would cost in the neighborhood of eight or nine thousand dollars. We are, at present, able to take care of only thirty-two patients. This is a very small proportion of the number of people in this state who should be sent to the sanitarium. Why is it not an entirely reasonable proposition that each of the 10 or 12 principal cities in Montana build a cottage to be known by the name of the city building such cottage? This would mean an expenditure of about $1,250, and we can conceive of no charitable

act that a city could do that would bring greater returns. Therefore, let us have the Helena Cottage, the Missoula Cottage, the Kalispell Cottage, etc. Another thing that is not so much needed by the institution as by the people is a number of endowed beds. There are a large number of people suffering from tuberculosis who are not able to pay their way to a sanitarium and provide for their families at the same time. These people are not county charges, could not be, if they wanted to, and would not, if they could. The result is that they stay at home, work as best they can, and infect their families and their neighbors until they die. There are numerous fraternal orders that could well afford to endow a bed, and in addition, there are at least 100 men in this state who could each endow a bed at this institution without materially reducing their income. So why not take such action, and thereby perform the noblest act of charity, namely, giving help to man without his knowing that he is receiving charity from any individual.

ACCIDENTS IN COAL MINES.

Cause of Accident.	1911		1912	
	Fatal	Non-Fatal	Fatal	Non-Fatal
Cars, motors and cables	2	12	1	13
Falling of roof, coal or timber	10	23	4	27
Powder explosions	1	5	1	4
Gas or dust explosions	..	..	..	1
Asphyxiated	..	..	1	..
All other causes	..	6	..	7
Total	13	46	7	52

ACCIDENTS IN QUARTZ MINES.

Cause of Accident.	1911		1912	
	Fatal	Non-Fatal	Fatal	Non-Fata.
Premature explosions	11	3	4	2
Falling rock, ground or timber	10	13	27	16
By cages in shaft	9	1	3	4
Falling down ore chutes	4	..	3	..
Falling down manways, shafts or raises	7	1	5	3
Died of heart failure in mine	..	..	1	..
By ore cars	1	2	1	..
Caught by falling ore chutes	1	..	1	..
By electric wires	..	..	2	..
By gas or foul air	3	..	..	..
Total	46	20	47	25

RAILROAD ACCIDENTS IN MONTANA—1911 AND 1912.

Railroad.	Employes.				Other than Employes.			
	Killed		Injured		Killed		Injured	
	1911	1912	1911	1912	1911	1912	1911	1912
Northern Pacific	13	15	151	210	22	18	84	61
Great Northern	5	13	169	176	15	12	52	31
Chicago, Milwaukee & S. P.	7	11	34	64	5	8	8	8
Montana Western	..	..	..	..	..	1	..	1
Butte, Anaconda & Pacific	..	2	9	28	..	2	3	5
Mont., Wyoming & Southern	..	..	1	..	..	..	..	..
Oregon Short Line	..	..	1	1	2	3	3	..
Gilmore & Pittsburg	..	..	1	..	..	..	..	..
Chicago, Burlington & Quincy	1	3	10	6	1	2	2	4
Total	26	44	376	485	45	46	152	110

REPORT OF THE HELENA FREE EMPLOYMENT OFFICE FOR THE YEAR 1912.

APPLICATIONS AND POSITIONS. (Classified.)	January.	February.	March.	April.	May.	June.	July.	September.	Total.
Applications for work—Male	100	44	21	63	54	63	5	3	353
Applications for work—Female	20	14	6	8	4	7	1	1	61
Applications for help—Male	33	30	13	58	31	63	4	3	235
Applications for help—Female	6	4	..	3	2	7	..	1	23
Positions filled—Male	33	30	13	58	31	59	4	3	231
Positions filled—Female	6	4	..	3	2	3	..	1	19
Nature of Positions Filled.									
Male—									
Miners, section men and laborers	30	29	12	56	30	..	4	3	164
Ranch hands and milkers	2	..	1	..	..	9	..	..	12
Miscellaneous	1	1	..	2	1	50	..	..	55
Female—									
Chambermaids, domestics and day workers	6	4	..	3	2	..	..	1	16
Hotel and restaurant help	..	..	..	..	..	..	..	..	..
Miscellaneous	..	..	..	..	..	3	..	..	3
Positions filled in city—Male	29	28	12	24	21	50	..	1	165
Positions filled in city—Female	2	2	..	3	1	3	..	1	12
Positions filled out of city—Male	4	2	1	34	10	9	4	2	66
Positions filled out of city—Female	4	2	..	..	1	..	..	..	7

STATEMENT OF THE BUSINESS TRANSACTED BY THE BUTTE FREE EMPLOYMENT OFFICE FOR THE YEAR 1911.

APPLICATIONS AND POSITIONS. (Classified.)	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Applications for work—Male	375	360	342	325	274	247	220	143	223	240	132	104	2,995
Applications for work—Female	260	275	264	240	265	237	163	87	204	182	160	120	2,457
Applications for help—Male	49	36	46	85	112	102	165	102	120	135	73	52	1,077
Applications for help—Female	147	100	125	149	114	185	258	255	164	171	132	142	1,942
Positions filled—Male	49	36	45	85	107	98	171	102	188	173	73	52	1,179
Positions filled—Female	140	88	92	143	104	124	158	131	121	116	105	102	1,424
Nature of Positions Filled.													
Male—													
Miners, section men and laborers	38	31	38	76	90	91	130	60	162	162	60	47	985
Ranch hands and milkers	2	1	6	6	22	7	41	42	18	5	7	3	160
Miscellaneous	9	4	1	3	..	..	..	..	8	6	6	2	39
Female—													
Chambermaids, domestics and day workers	75	55	63	116	67	75	94	82	81	83	73	71	936
Hotel and restaurant help	53	24	27	21	27	43	62	43	38	33	30	31	432
Miscellaneous	12	9	2	6	10	6	2	3	2	..	2	..	54
Positions filled in city—Male	47	2	36	68	82	85	110	60	57	96	66	47	736
Positions filled in city—Female	101	22	85	121	95	105	146	125	110	106	96	95	1,207
Positions filled out of city—Male	2	34	9	17	25	13	61	42	123	77	7	3	413
Positions filled out of city—Female	39	66	7	22	9	19	12	6	11	10	9	7	217

STATEMENT OF THE BUSINESS TRANSACTED BY THE BUTTE FREE EMPLOYMENT OFFICE FOR THE YEAR 1912.

APPLICATIONS AND POSITIONS. (Classified.)	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Applications for work—Male	115	76	98	112	147	100	183	169	139	210	102	91	1,542
Applications for work—Female	170	135	127	137	160	170	180	158	193	190	115	109	1,844
Applications for help—Male	57	40	65	76	112	80	117	97	109	175	88	76	1,092
Applications for help—Female	146	150	154	174	198	251	236	134	293	233	217	228	2,404
Positions filled—Male	76	40	66	76	112	80	117	97	109	175	88	76	1,112
Positions filled—Female	107	111	111	125	115	163	172	122	165	169	146	160	1,666
Nature of Positions Filled.													
Male—													
Miners, section men and laborers	69	30	63	59	104	70	..	65	100	105	80	76	821
Ranch hands and milkers	5	2	3	17	8	10	76	23	9	70	8	..	231
Miscellaneous	2	8	..	..	..	..	41	9	..	..	..	..	60
Female—													
Chambermaids, domestics and day workers..	85	80	71	74	80	81	118	85	98	126	119	106	1,123
Hotel and restaurant help	22	31	36	51	35	82	51	37	65	43	27	54	534
Miscellaneous	..	..	..	..	..	..	3	..	2	..	..	..	5
Positions filled in city—Male	49	30	63	59	95	70	41	65	80	105	80	74	811
Positions filled in city—Female	93	97	99	116	101	151	142	103	152	157	136	150	1,497
Positions filled out of city—Male	27	10	3	17	17	10	76	32	29	70	8	2	301
Positions filled out of city—Female	14	14	12	9	14	12	30	19	13	12	10	10	150

GRAIN ELEVATORS IN MONTANA.

Location.	No.	Capacity (Bushels)
BIG HORN—		
Hardin	1	12,000
BLAINE—		
Chinook	1	30,000
Dodson	1	30,000
Harlem	1	30,000
Wagner	1	30,000
BROADWATER—		
Townsend	1	20,000
CARBON—		
Red Lodge	1	30,000
Roberts	1	10,000
CASCADE—		
Belt	1	30,000
Cascade	1	30,000
Geyser	1	30,000
Great Falls	10	550,000
Monarch	1	25,000
Raynesford	1	30,000
Spion Kop	1	30,000
Stockett	1	25,000
Ulm	1	25,000
Vaughan	1	30,000
Wayne	1	30,000
CHOUTEAU—		
Benton	1	30,000
Big Sandy	1	30,000
Carter	1	30,000
Westmore	1	15,000
CUSTER—		
Baker	1	25,000
Fallon	2	62,000
Ismay	1	35,000
Mildred	1	20,000
Miles City	1	40,000
Plevna	1	15,000
Terry	1	40,000
DAWSON—		
Crane	1	40,000
Dennis	1	30,000
Edgehill	1	15,000
Glendive	2	80,000
Hodges	1	30,000
Intake	3	75,000
Marsh	1	40,000
Riverview	1	40,000
Savage	2	80,000
Sidney	2	80,000
Stipek	3	70,000
Wibaux	5	180,000
Yates	2	80,000
FERGUS—		
Benchland	3	90,000
Brooks	1	28,000
Buffalo	1	30,000
Dover	1	30,000
Garneill	1	30,000
Glengarry	2	100,000
Hilger	1	25,000
Hobson	2	60,000
Lewistown	3	90,000
Mendon	1	30,000
Moccasin	2	60,000
Moore	3	165,000
Sipple	1	125,000
Stanford	3	90,000
Straw	2	35,000
Windham	1	30,000
FLATHEAD—		
Columbia Falls	1	28,000
Kalispell	3	490,000
Polson	3	100,000
GALLATIN—		
Belgrade	4	560,000
Bozeman	5	610,000
Greenwood	1	50,000
Holland	1	50,000
Manhattan	3	460,000
Maudlow	1	40,000
Salesville	1	50,000
Three Forks	1	30,000
Willow Creek	1	30,000
GRANITE—		
Drummond	1	30,000
Hall	1	25,000
Philipsburg	1	25,000
Ravina	1	25,000
HILL—		
Box Elder	1	30,000
Chester	1	30,000
Concord	1	30,000
Dunkirk	1	30,000
Galata	1	30,000
Gildford	1	30,000
Havre	1	30,000
Hingham	1	30,000
Inverness	1	30,000
Joplin	1	30,000
Kremlin	1	30,000
Lavington	1	30,000
Rudyard	1	30,000
Tiber	1	30,000
MADISON—		
Harrison	1	20,000
Twin Bridges	1	25,000
MEAGHER—		
Harlowton	1	200,000
Hedgesville	1	30,000
Judith Gap	3	130,000
Nihill	1	30,000
Oka	1	25,000
Shawmut	1	25,000
Two Dot	1	25,000
White Sulphur Springs	1	25,000
MISSOULA—		
Missoula	1	75,000
Ravalli	1	33,000
MUSSELSHELL—		
Belmont	1	30,000
Lavina	1	25,000
Roundup	1	16,000
Ryegate	2	54,000
PARK—		
Clyde Park	2	70,000
Livingston	1	75,000
Wilsall	2	80,000
RAVALLI—		
Hamilton	1	50,000
ROSEBUD—		
Forsyth	1	30,000
SWEET GRASS—		
Big Timber	1	40,000
TETON—		
Brady	2	60,000
Collins	1	30,000
Conrad	4	120,000
Cut Bank	1	30,000
Dutton	1	30,000
Shelby	1	30,000
Valier	1	30,000

GRAIN ELEVATORS IN MONTANA—(Continued).

Location.	No.	Capacity (Bushels)	Location.	No.	Capacity (Bushels)
VALLEY—			Plentywood	3	90,000
Antelope	3	90,000	Poplar	1	30,000
Bainville	2	60,000	Reserve	1	30,000
Brockton	1	30,000	Saco	1	30,000
Culbertson	3	90,000	Wolf Point	1	30,000
Froid	4	120,000			
Glasgow	2	60,000	YELLOWSTONE—		
Hinsdale	1	30,000	Acton	1	30,000
Homestead	2	60,000	Billings	2	150,000
Lakeside	1	30,000	Broadview	2	60,000
Lanark	1	30,000	Columbus	1	30,000
McCabe	2	60,000	Comanche	1	30,000
Malta	1	30,000	Huntley	1	30,000
Medicine Lake	4	120,000	Laurel	1	40,000
Mondak	2	60,000	Park City	1	40,000
Nashua	1	30,000			
			Total	219	9,163,000

PUBLIC SCHOOL STATISTICS FOR THE YEAR ENDING AUGUST 31, 1912.

COUNTY.	Number of School Buildings.	Number of Children Between Ages of Six and Twenty-one.	Value of School Libraries.	Value of School Houses, Including Site, If Any.	Amount Expended for School Purposes.
Beaverhead	37	1,781	$ 3,682.25	$ 74,071.50	$ 89,048.19
Blaine	25	1,405	1,694.95	57,730.92	58,348.18
Broadwater	26	903	1,188.00	52,820.00	51,770.66
Carbon	59	4,600	3,722.26	66,336.00	156,530.74
Cascade	104	8,229	8,414.00	551,808.52	535,736.96
Chouteau	29	1,869	2,256.00	34,603.00	58,246.03
Custer	114	4,562	5,255.00	207,915.00	227,204.09
Dawson	71	4,353	4,229 89	93,000.00	173,791.16
Deer Lodge	22	2,907	3,383.00	212,370.00	113,419.54
Fergus	98	4,928	3,528.00	229,070.00	303,293.72
Flathead	64	5,206	4,952.00	251,325.00	212,359.29
Gallatin	64	1,237	4,571.53	294,898.00	168,359.68
Granite	16	786	1,778.00	56,760.00	48,203.03
Hill	49	3,790	1,920.63	130,535.00	139,682.42
Jefferson	26	1,236	3,415 00	48,825.00	69,323.59
Lewis and Clark	55	4,980	5,019.06	532,832.00	247,525.95
Lincoln	31	1,078	2,598.80	50,525.00	79,847.06
Madison	54	1,992	6,081.00	107,670.00	114,445.36
Meagher	35	1,075	1,897.00	74,116.00	95,177.01
Missoula	60	5,220	751.61	364,360.00	242,955.65
Musselshell	34	1,687	789.35	48,897.00	94,693.50
Park	51	2,712	3,405.57	151,571.45	131,785.05
Powell	62	1,471	750.00	46,708.00	59,107.41
Ravalli	39	3,146	3,862.00	147,950.00	122,679.20
Rosebud	51	1,631	6,074.00	109,692.00	123,106.57
Sanders	35	947	2,501.00	92,850.00	71,513.81
Silver Bow	36	12,672	6,057.06	1,025,495.00	523,663.47
Sweet Grass	35	1,103	2,108.00	57,385.00	81,712.23
Teton	48	2,568	1,477.85	137,155.00	120,226.80
Valley	85	4,833	4,069.82	178,625.00	200,603.99
Yellowstone	43	5,486	4,456.00	380,125.00	328,079.85
Total	1,558	103,403	$105,352.63	$5,868,024.39	$4,966,755.67

AREA AND POPULATION OF COUNTIES—COMPILED FROM THIRTEENTH CENSUS.

COUNTY.	Land Area in Miles.	Population.		Per Cent of Increase.		
	1910	1910	1900	1890	1900–1910	1890–1900
Beaverhead	4,719	6,416	5,615	4,655	14.8	20.6
Broadwater	1,194	3,491	2,641	.....	32.2	....
Carbon	2,438	13,962	7,533	.....	85.3	....
Cascade	3,384	28,833	25,777	8,755	11.9	194.4
Chouteau	15,972	17,191	10,966	4,741	56.8	103.6
Custer	13,156	14,123	7,891	5,308	79.0	21.3
Dawson	13,231	12,725	2,443	2,056	420.9	18.8
Deer Lodge	749	12 988	17,393	15,155	—25.3	14.8
Fergus	9,078	17,385	6,937	3,514	150.6	97.4
Flathead	6,070	18,785	9,375	.....	100.4	....
Gallatin	2,513	14,079	9,553	6,246	47.4	52.9
Granite	1,637	2,942	4,328	.....	—32.0	....
Jefferson	1,650	5,601	5,330	6,026	5.1	—11.5
Lewis and Clark	3,465	21,853	19,171	19,145	14.0	0.1
Lincoln	3,530	3,638	.....	.....	....	....
Madison	4,581	7,229	7,695	4,692	—6.1	64.0
Meagher	3,766	4,190	2,526	4,749	65.9	—46.8
Missoula	4,243	23,596	13,964	14,427	69.0	—18.0
Park	2,675	10,731	7,341	6,881	46.2	6.7
Powell	2,559	5,904	.....	.....	....	....
Ravalli	2,447	11,666	7,822	.....	49.1	....
Rosebud	9,663	7,985	.....	.....	....	....
Sanders	2,859	3,713	.....	.....	....	....
Silver Bow	698	56,848	47,635	23,744	19.3	100.6
Sweet Grass	2,918	4,025	3,086	.....	30.6	....
Teton	7,581	9,546	5,080	.....	87.9	....
Valley	13,515	13,630	4,355	.....	213.0	....
Yellowstone	5,729	22,944	6,212	2,065	269.3	200.8
STATE	146,201	376,053	243,329	142,924	54.5	70.3

Gross area, 146,997 square miles. Land area, 146,201 square miles. Water area, 796 square miles.

MORTGAGES FILED AND SATISFIED DURING FISCAL YEAR ENDING JUNE 30, 1911.

COUNTY.	Real Estate Mortgages.		Chattel Mortgages.	
	Filed.	Satisfied.	Filed.	Satisfied.
Beaverhead	$ 241,343.00	$ 242,875.00	$ 161,099.25	$ 45,746.62
Broadwater	231,579.97	67,613.80	85,414.92	62,110.68
Carbon	1,011,777.78	282,393.58	1,236,448.95	201,131.02
Cascade	1,314,393.48	799,143.64	578,083.91	171,415.43
Chouteau	693,806.31	349,000.26	1,069,439.36	113,388.49
Custer	1,023,780.36	342,330.41	2,569,305.01	1,455,745.01
Dawson	609,320.31	161,137.02	1,730,035.56	147,826.32
Deer Lodge	72,721.00	76,931.00	55,655.50	55,612.81
Fergus	2,831,084.47	1,103,464.29	1,421,497.38	100,793.36
Flathead	804,918.67	269,250.68	381,305.59	72,617.84
Gallatin	678,541.41	336,373.82	452,767.86	36,642.76
Granite	133,932.00	129,519.00	62,010.81	24,798.00
Jefferson	86,598.76	70,767.95	88,864.98	13,318.75
Lewis and Clark	655,549.08	279,875.99	187,962.31	49,749.92
Lincoln	102,867.88	37,759.78	58,443.41	12,944.57
Madison	616,515.57	160,883.15	288,292.98	12,899.60
Meagher	636,081.35	133,581 60	240,038.43	59,129.04
Missoula	2,407,306.97	289,945.00	319,418.41	91,110.57
Park	1,182,073.10	332,827.50	565,073.98	18,802.95
Powell	237,181.00	94,447.00	166,042.00	29,837.00
Ravalli	2,067,019.00	500,587.00	230,828.43	46,381.81
Rosebud	506,240.46	120,415.90	3,540,461.10	1,307,761.46
Sanders	151,053.00	69,075.00	198,744.51	7,703.41
Silver Bow	1,815,641.00	2,073,515.00	264,309.50	157,451.45
Sweet Grass	614,213.01	141,643.87	1,378,456.86	207,226.28
Teton	597,328.41	175,018.67	701,422.07	88,813.60
Valley	530,697.98	113,643.84	1,736,433.57	369,215.78
Yellowstone	1,888,165 70	730,448.75	2,439,533.20	406,926.26
Totals	$23,770,031.03	$9,484,367.90	$22,187,389.68	$5,367,100.79

Total amount of real estate mortgages satisfied by foreclosure, $95,148.75.

Corporation mortgages filed in more than one county amounted to $892,818,000.

The above statement does not include any partial releases or extensions. The amount of chattel mortgages satisfied represents only a small portion of the total sum actually paid. If the satisfaction has not been filed the mortgagor is released by law 60 days after the maturity of a chattel mortgage.

PRINCIPAL CROPS, PRODUCTION BY COUNTIES, 1909—COMPILED FORM THE THIRTEENTH CENSUS.

COUNTY.	Corn. bu.	Oats. bu.	Wheat. bu.	Barley. bu.	Rye. bu.	Flaxseed. bu.	Potatoes. bu.	Hay and Forage. tons.
THE STATE	274,103	13,805,735	6,251,945	753,268	111,214	447,484	3,240,696	1,692,656
Beaverhead	.....	792,144	20,101	4,865	1,680	.....	77,715	167,595
Broadwater	4,000	364,628	68,272	8,450	8,815	.....	55,652	42,398
Carbon	9,732	704,282	224,807	44,454	268	.....	168,003	104,288
Cascade	7,968	927,688	618,637	95,426	12,122	14	182,161	102,024
Chouteau	2,465	680,518	88,219	27,231	7,653	1,508	111,702	120,561
Custer	71,282	399,398	121,593	14,284	3,289	88,454	85,688	49,613
Dawson	78,488	916,009	404,436	43,092	843	171,413	98,466	38,615
Deer Lodge	.....	26,548	6,370	389	26	.....	88,924	21,441
Fergus	14,622	1,467,000	1,230,854	62,918	4,223	3,362	165,329	97,164
Flathead	1,235	795,721	604,733	56,404	1,718	.....	216,004	34,861
Gallatin	9,185	1,735,672	1,234,926	166,622	14,913	.....	155,061	86,992
Granite	.....	131,964	48,937	8,453	3,585	.....	37,370	34,710
Jefferson	.....	60,156	20,672	2,665	6,329	.....	72,093	27,835
Lewis and Clark	525	244,299	38,467	10,935	9,450	150	157,553	57,688
Lincoln	17	32,228	35,703	4,712	520	.....	28,749	6,631
Madison	.....	566,529	119,830	18,155	320	170	257,751	94,331
Meagher	.....	160,124	20,998	5,838	1,242	1,658	32,228	62,863
Missoula	.....	353,588	220,630	20,198	5,125	.....	115,206	31,576
Park	835	501,548	118,553	24,822	6,729	.....	112,213	69,423
Powell	210	183,556	31,965	7,135	6,448	.....	82,234	75,900
Ravalli	5,003	811,219	180,304	29,154	7,655	.....	386,998	52,027
Rosebud	20,276	131,744	54,838	10,967	875	.....	74,757	41,906
Sanders	985	70,825	59,552	4,401	.....	.....	30,782	7,529
Silver Bow	.....	19,644	1,811	1,143	747	.....	6,903	10,791
Sweet Grass	790	281,339	26,143	16,392	4,631	24	60,222	71,268
Teton	.....	278,638	194,656	10,455	565	600	25,667	34,882
Valley	22,640	705,075	302,861	47,333	965	178,853	62,973	53,637
Yellowstone	23,845	463,651	153,077	12,375	478	1,278	292,232	94 107

PENITENTIARY STATISTICS—1910.

Statement Showing by Counties the Offenses for Which Prisoners Were Committed to the Montana State Prison During the Year 1910.

OFFENSE FOR WHICH COMMITTED.	Beaverhead.	Broadwater.	Carbon.	Cascade.	Chouteau.	Custer.	Dawson.	Deer Lodge.	Fergus.
Abduction	..	..	..	..	..	..	..	..	..
Arson	..	..	1	..	..	..	..	..	..
Assault	2	..	3	..	1	..	..	..	1
Bigamy	..	..	..	..	..	..	..	..	..
Burglary	2	..	..	3	1	2	3	1	2
Escaping from State Prison	..	..	..	..	..	..	..	..	..
Forgery	3	..	3	5	1	1	1	..	3
Grand Larceny	3	1	1	9	6	4	2	..	6
Incest	..	..	..	..	..	..	..	..	..
Injuring Public Jail	..	..	..	..	..	..	1	..	..
Manslaughter	1	..	..	..	..	..	..	..	..
Murder	..	..	..	..	..	..	..	..	1
Passing Fictitious Checks	..	..	1	..	..	..	1	..	..
Rape	..	..	..	..	1	..	1	..	1
Receiving Stolen Property	..	..	..	..	..	..	..	..	..
Robbery	..	..	..	2	2	3	..	1	..
Sodomy	..	..	..	..	..	..	..	..	..
Perjury	..	..	..	..	..	..	..	..	1
Unlawful Interference With R. R. Property	..	..	..	..	..	..	..	..	..
Total committed during 1910	11	1	9	19	12	10	9	2	15
Total in confinement Dec. 31, 1909	27	7	21	50	31	26	24	10	31
Total									
Discharged by Expiration	8	3	10	25	14	12	11	3	15
Discharged by Parole	3	..	1	5	..	2	2	2	1
Discharged by Pardon	..	..	..	..	..	..	..	..	..
Discharged by Order of Court	..	..	..	..	..	..	..	..	..
Discharged by Commutation of Sentence	..	..	..	..	..	..	..	..	..
Sent to Asylum	..	..	..	..	..	..	..	..	..
Transferred to Leavenworth	..	..	..	..	..	..	..	..	..
Died	..	..	1	1	..	..	..	..	..
Escaped	..	..	..	..	1	..	..	..	1
Total Discharged, Executed, Died, Escaped	11	3	12	31	15	14	13	5	17
Total in confinement, Dec. 31, 1910	27	5	18	38	28	22	20	7	29

PENITENTIARY STATICTICS—1910—(Continued).

Statement Showing by Counties the Offenses for Which Prisoners Were Committed to the Montana State Prison During the Year 1910.

Flathead.	Gallatin.	Granite.	Jefferson.	Lewis and Clark.	Lincoln.	Madison.	Meagher.	Missoula.	Musselshell.	Park.	Powell.	Ravalli.	Rosebud.	Sanders.	Silver Bow.	Sweet Grass.	Teton.	Valley.	Yellowstone.
..	..	..	..	..	.	..	..	..	..	..	..	..	..	1	..	.	..	..	..
1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.	..	..	..
1	4	..	..	..	..	..	..	6	..	..	..	2	1	..	6	1	2	1	1
..	..	..	..	..	.	..	..	..	..	..	..	..	..	..	1	..	..	..	..
1	4	..	2	1	..	..	3	1	..	2	1	2	3	..	4	1	10	..	6
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1	8	..	..	5	..	1	1	1	..	..	..	..	..	1	6	1	2	2	6
3	4	..	3	..	1	2	2	6	..	6	1	2	5	1	9	3	4	9	5
1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..
1	..	..	1	1	1	..	..	..	..	..	..	..	..	1	1	..	..	..	1
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	1	..
1	..	..	..	..	..	..	..	..	..	3	..	..	..	..	1	..	..	..	2
1	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	5	..	4	..	3
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
11	20	..	7	9	2	3	6	14	..	10	2	7	10	4	35	6	22	14	24
19	37	11	12	33	5	14	9	50	..	28	16	5	3	17	84	9	8	21	65
6	16	3	7	18	3	4	9	16	..	21	10	3	2	5	26	8	5	9	49
..	..	2	..	1	..	2	1	4	..	..	..	1	..	..	3	1	..	1	2
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	..	..	..	.	.	..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	..	..	..	2	..	..	..	..	..	.	..	..	..	..	..	..	..	..	..
..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	.	..	..
..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1
6	17	5	7	22	3	7	10	21	..	21	10	4	2	5	30	9	5	10	52
24	40	6	12	20	4	10	5	43	..	17	8	8	11	16	89	6	25	25	37

PENITENTIARY STATISTICS—1911.

Statement Showing by Counties the Offenses for Which Prisoners Were Committed to the Montana State Prison During the Year 1911.

OFFENSE FOR WHICH COMMITTED.	Beaverhead.	Broadwater.	Carbon.	Cascade.	Chouteau.	Custer.	Dawson.	Deer Lodge.	Fergus.
Living Off Prostitutes	..	..	..	..	..	..	..	..	..
Seduction	..	..	..	..	..	..	..	..	..
Arson	..	..	..	1	..	..	..	..	..
Assault	..	..	1	2	1	..	..	..	..
Bigamy	..	..	..	..	..	..	..	..	..
Burglary	13	..	1	12	1	2	4	2	..
Escaped 1910, Returned 1911	..	..	..	..	..	..	..	..	..
Escaping from State Prison	..	..	..	..	..	..	..	..	..
Forgery	4	..	..	9	1	4	1	..	3
Grand Larceny	6	1	4	8	6	8	12	..	7
Mahem	..	..	..	..	..	..	..	..	..
Injuring Public Jail	..	..	1	..	1	..	..	..	..
Manslaughter	1	..	..	..	1	..	..	..	1
Murder	..	..	..	..	1	..	..	..	..
Passing Fictitious Checks	..	..	..	1	..	..	..	..	..
Rape	..	..	..	..	..	1	1	1	..
Receiving Stolen Property	..	..	..	..	..	..	..	..	..
Robbery	..	..	..	1	2	1	..	..	1
Sodomy	..	..	..	..	..	..	..	..	..
Killing Livestock	..	..	..	..	..	..	1	..	..
Dynamiting Fish	..	..	1	..	..	..	..	..	..
Total Committed During 1911	24	1	8	34	14	16	19	3	12
Total in Confinement, Dec. 31, 1910	27	5	18	38	28	22	20	7	29
Total	51	6	26	72	42	38	39	10	41
Discharged by Expiration	6	.	7	16	8	16	11	..	14
Discharged by Parole	..	1	..	5	2	1	3	..	1
Discharged by Pardon	1	..	..	..	..	..	..	..	..
Discharged by Order of Court	..	..	..	..	..	..	..	..	..
Removed to Asylum	1	..	..	..	..	..	..	..	..
Executed	..	..	..	..	..	..	..	..	..
Died	..	..	..	..	..	1	..	..	1
Escaped	..	..	..	1	1	..	..	..	..
Total Discharged, Executed, Died, Escaped	7	1	7	22	11	18	14	..	16
Total in Confinement, Dec. 31, 1911	44	5	19	50	31	20	25	10	25

PENITENTIARY STATISTICS—1911—(Continued).

Statement Showing by Counties the Offenses for Which Prisoners Were Committed to the Montana State Prison During the Year 1911.

Flathead.	Gallatin.	Granite.	Jefferson.	Lewis and Clark.	Lincoln.	Madison.	Meagher.	Missoula.	Musselshell.	Park.	Powell.	Ravalli.	Rosebud.	Sanders.	Silver Bow.	Sweet Grass	Teton.	Valley.	Yellowstone.
1	..	..	..	..	..	..	..	3	..	..	..	..	..	..	1	..	..	..	2
1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
3	..	..	..	2	..	1	4	1	..	3	1	2	..	..	3	..	..	1	..
1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
6	3	..	3	1	..	1	3	9	2	2	1	..	2	4	8	..	4	1	12
..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	‡1	..	..	..
..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..
1	1	..	..	3	1	..	..	3	1	2	..	..	..	1	9	1	2	..	8
7	10	..	..	2	2	5	2	7	1	3	3	..	1	..	12	..	1	7	12
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*1	..	..	..	*1
..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..
..	..	..	2	1	..	..	..	..	†1	..	..	..	..	..	5	..	..	..	..
6	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	..	..
3	1	..	..	..	..	..	..	..	..	..	..	..	..	§1	2	..	..	..	..
..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	2
..	3	..	..	..	1	..	..	4	..	..	..	2	..	..	11	..	..	..	1
..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
29	19	..	5	9	5	8	10	28	6	10	9	4	5	6	53	2	10	9	39
24	40	6	12	20	4	10	5	43	..	17	8	8	11	16	89	6	25	25	37
53	59	6	17	29	9	18	15	71	6	27	17	12	16	22	142	8	35	34	76
10	22	2	7	12	..	3	5	23	..	8	4	5	4	7	41	3	4	14	26
4	1	..	1	..	..	2	..	3	..	6	3	1	..	1	9	1	..	1	..
..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..
..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	1	1	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..
14	27	4	8	12	1	5	6	26	..	14	7	6	4	8	52	4	4	15	26
39	32	2	9	17	8	13	9	45	6	13	10	6	12	14	90	4	31	19	50

‡Breaking parole.
§Impersonation.
†Extortion.
**Carrying concealed weapons.

JAIL INCARCERATIONS—1910.

Statement of Persons Incarcerated in County Jails During 1910, as Reported by Sheriffs.

COUNTY.	White.			Colored.		
	Male.	Female.	Total.	Male.	Female.	Total.
Beaverhead (a)	212	1	213	3	..	3
Broadwater	2	..	2	..	..	..
Carbon (a)	293	..	293	..	..	..
Cascade	260	14	3	2	5	2
Chouteau (a)	189	4	193	5	2	7
*Custer	..	..	..	..	..	..
Dawson	93	1	94	..	..	..
Deer Lodge (a)	219	10	229	11	3	14
Fergus	152	3	155	9	3	12
Flathead	126	2	128	..	..	..
Gallatin	233	11	244	..	..	..
Granite (a)	17	1	18	..	..	..
Jefferson	52	..	52	..	..	..
Lewis and Clark	349	34	383	21	17	38
Lincoln	40	1	41	..	..	..
Madison (a)	48	1	49	..	..	..
Meagher	42	2	44	2	1	3
*Missoula	..	..	..	..	..	..
Park	188	16	204	7	5	12
Powell	411	1	412	2	1	3
Ravalli	38	2	40	1	..	1
Rosebud (a)	49	..	49	..	..	..
Sanders (a)	56	..	56	2	1	3
Silver Bow (a)	1,062	138	1,200	306	21	327
Sweet Grass	29	1	30	..	..	..
Teton (a)	51	1	52	..	..	..
Valley	203	3	206	1	..	1
Yellowstone	214	6	220	3	2	5
	4,628	253	4,881	376	58	434

JAIL INCARCERATIONS—1910.—(Continued.)

Statement of Persons Incarcerated in County Jails During 1910, as Reported by Sheriffs.

Indians and Half Breeds.			Chinese and Japanese.	Total Confined During Year.	Total Number of Days All Were Confined.	Average Number of Days Each Was Confined.	Misdemeanors.	Held for Felonies.	Witnesses.	Insane, Held Temporarily.	Percentage of Incarcerations for Each County to Total in the State.
Male	Female.	Total.									
..	..	..	..	215	11,994	55.53	149	54	2	11	4.01
..	..	..	..	2	15	7.50	2	..	..	..	.04
..	..	..	..	293	2,078	7.10	247	42	1	3	5.44
2	..	2	..	281	9,203	32.75	199	60	2	20	5.22
8	1	9	..	209	8,569	41.00	79	44	66	20	3.88
..	..	..	..	*	*	*	*	*	*	*	*
..	..	..	2	96	2,841	29.58	48	34	8	6	1.79
1	..	1	2	246	4,781	19.43	215	6	5	20	4.57
3	1	4	..	171	4,593	26.85	77	80	2	12	3.19
4	..	4	5	137	1,175	8.54	67	48	1	21	2.54
..	..	..	..	244	3,700	15.16	169	51	12	12	4.53
..	..	..	..	18	353	19.60	9	1	1	7	.33
..	..	..	..	52	1,132	21.77	31	15	..	6	.97
4	2	6	4	431	5,992	13.67	390	4	6	31	7.99
..	..	..	..	41	1,060	25.85	29	4	2	6	.76
..	..	..	..	49	946	19.30	13	30	1	5	.90
1	..	1	2	50	2,750	55.00	39	4	2	5	.92
..	..	..	..	*	*	*	*	*	*	*	*
..	..	..	4	220	4,549	20.67	91	87	36	6	4.08
..	..	..	2	417	4,383	10.51	404	6	2	5	7.73
..	..	..	..	41	879	21.44	19	12	2	8	.76
..	..	..	..	49	953	19.45	1	44	2	2	.90
..	..	..	..	60	843	14.05	33	21	..	6	1.11
1	..	1	..	*	*	*	*	*	*	*	*
..	..	..	3	1,530	32,130	21.00	1,196	190	120	24	28.37
..	..	..	..	30	1,068	35.60	19	10	..	1	.55
12	1	13	..	65	**	**	26	34	..	5	1.20
..	..	..	..	207	4,637	22.36	163	36	..	8	3.83
2	..	2	10	237	7,460	31.47	141	66	3	27	4.39
38	5	43	34	5,392	118,084	20.00	3,856	983	276	277	100.00

*No report.
**Not reported.
(a)Includes city prisoners.

JAIL INCARCERATIONS—1911.

Statement of Persons Incarcerated in County Jails During 1911, as Reported by Sheriffs.

COUNTY.	White.			Colored.		
	Male.	Female.	Total.	Male.	Female.	Total.
Beaverhead	252	5	257	3	..	3
Broadwater	31	..	31	..	..	..
*Carbon	274	2	276	..	..	..
Cascade	340	26	366	11	10	21
*Chouteau	143	4	147	4	2	6
Custer	175	6	181	1	..	1
Dawson	96	..	96	2	..	2
Deer Lodge	318	19	337	13	1	14
Fergus	151	8	159	4	..	4
Flathead	111	10	121	2	..	2
Gallatin	242	4	246	3	..	3
*Granite	28	1	29	..	..	..
Jefferson	119	..	119	..	..	..
*Lewis and Clark	543	30	573	38	37	75
Lincoln	25	1	26	..	..	..
*Madison	43	1	44	..	..	..
Meagher	50	4	54	2	..	2
*Missoula	3,529	65	3,594	13	..	13
*Musselshell	32	..	32	1	..	1
Park	156	38	194	7	3	10
*Powell	367	..	367	..	..	..
Ravalli	64	7	71	..	..	..
*Rosebud	48	..	48	..	..	..
*Sanders	60	1	61	2	..	2
*Silver Bow	1,449	53	1,502	42	35	77
Sweet Grass	27	..	27	..	..	..
*Teton	53	1	54	..	..	..
Valley	197	3	200	..	..	..
Yellowstone	274	10	284	9	2	11
	9,197	299	9,496	157	90	247

JAIL INCARCERATIONS—1911.—(Continued.)

Statement of Persons Incarcerated in County Jails During 1911, as Reported by Sheriffs.

Indians and Half Breeds.			Chinese and Japanese.	Total Confined During Year.	Total Number of Days All Were Confined.	Average Number of Days Each Was Confined.	Misdemeanors.	Held for Felonies.	Witnesses.	Insane, Held Temporarily.	Percentage of Incarcerations for Each County to Total in the State.
Male.	Female.	Total.									
3	..	3	2	265	4,557	17.19	174	77	1	13	2.68
..	..	..	..	31	380	12.25	..	23	6	2	.31
1	..	1	..	277	2,388	8.62	200	68	1	8	2.81
2	..	2	..	389	11,442	29.41	253	114	6	16	3.94
10	..	10	..	163	6,684	41.00	102	45	..	15	1.65
..	..	..	..	182	4,398	24.15	116	42	5	19	1.84
1	..	1	..	99	3,523	35.58	45	45	..	8	1.09
..	..	..	2	353	7,858	22.26	346	3	1	3	3.57
5	1	6	..	169	2,552	15.10	128	24	8	9	1.71
..	..	..	..	123	2,536	20.61	57	52	1	13	1.24
..	..	..	..	249	6,107	24.52	176	52	12	9	2.50
..	..	..	..	29	569	19.62	24	3	..	2	.29
..	..	..	1	120	839	6.15	108	11	..	1	1.21
14	..	14	3	665	12,635	19.00	612	13	23	17	6.73
..	..	..	..	26	453	17.42	10	13	..	3	.26
..	..	..	..	44	1,005	22.84	..	1	..	..	.44
..	..	..	1	57	2,833	49.70	37	9	3	8	.57
46	..	46	12	3,665	8,300	2.26	3,535	72	39	19	37.05
1	..	1	..	34	955	28.08	14	14	..	6	.34
1	..	1	..	205	3,374	16.46	101	84	6	14	2.07
1	..	1	2	370	3,674	9.92	344	14	1	..	3.75
..	..	..	4	75	1,160	15.46	44	15	2	14	.76
2	..	2	..	50	1,173	23.46	4	28	12	6	.50
..	..	..	..	63	913	14.49	47	8	..	8	.64
..	..	..	17	1,596	25,500	15.97	1,150	379	20	47	16.15
..	..	..	..	27	565	20.92	13	11	..	3	.27
5	..	5	..	59	1,873	31.74	29	2	25	3	.59
8	..	8	..	208	4,369	21.00	175	28	..	5	2.11
..	..	..	3	298	11,076	37.16	168	99	5	26	3.02
100	1	101	47	9,891	133,691	13.50	8,014	1,349	177	297	100.00

*Includes city prisoners confined in county jail.

REPORT OF THE INSANE ASYLUM FOR THE FISCAL YEARS 1911 AND 1912.

Counties From Which Patients at the Asylum Were Received and the Number of Patients From Each County.

COUNTY.	Year Ending Nov. 30th, 1911.			Year Ending Nov. 30th, 1912.		
	Male.	Female	Total.	Male.	Female.	Total.
Beaverhead	18	..	18	15	2	17
Blaine	..	..	..	1	..	1
Broadwater	1	1	2	1	1	2
Carbon	14	6	20	13	7	20
Cascade	39	18	57	47	17	64
Chouteau	18	8	26	18	7	25
Custer	7	9	16	15	8	23
Dawson	14	1	15	14	3	17
Deer Lodge	51	22	73	51	24	75
Fergus	15	7	22	14	6	20
Flathead	27	6	33	27	7	34
Gallatin	27	8	35	26	7	33
Granite	7	4	11	6	4	10
Hill	..	..	..	1	..	1
Jefferson	19	9	28	21	8	29
Lewis and Clark	48	31	79	49	32	81
Lincoln	..	..	..	2	..	2
Madison	11	2	13	11	3	14
Meagher	10	2	12	8	2	10
Missoula	48	14	62	49	18	67
Musselshell	1	..	1	2	1	3
Park	9	2	11	11	6	17
Powell	9	3	12	11	1	12
Ravalli	16	2	18	18	3	21
Rosebud	1	3	4	7	2	9
Sanders	4	..	4	2	..	2
Silver Bow	104	38	142	112	40	152
Sweet Grass	6	1	7	5	1	6
Teton	16	4	20	18	5	23
Valley	3	3	6	9	3	12
Yellowstone	28	6	34	32	10	42
Penitentiary	9	..	9	10	..	10
Total	580	210	790	626	228	854

CAUSE OF INSANITY OF TOTAL NUMBER OF PATIENTS TREATED, DEC. 1, 1910, TO NOV. 30, 1912.

	Year Ending Nov. 30th.	
	1911	1912
Heredity	622	676
As follows:		
Herelity alone	314	342
Heredity and Adolescence	105	104
Heredity and Nervous Exhaustion	15	15
Heredity and Ill Health	52	52
Heredity and Epilepsy	46	53
Heredity and Alcoholism	35	52
Heredity and Choreic	2	1
Heredity and Menopause	37	42
Heredity and Puerperium	5	5
Heredity and Hysteria	3	2
Heredity and Consanguinity	5	5
Heredity and Masturbation	3	3
	622	676
Senility	108	110
Apoplexy	11	16
Narcotism	9	14
Alcoholism	35	52
Lues	109	112
Head Injuries	4	4
Unknown	118	117
Total Insane	1,016	1,101
Not Insane	3	5
Total	1,019	1,106

MOVEMENT OF POPULATION FROM DECEMBER 1st, 1910, TO NOVERMER 30th, 1912.

	Year. Ending November 30th					
	1911			1912		
	Male	Female	Total	Male	Female	Total
Number in Asylum Beginning Fiscal Year	568	185	753	580	210	790
Number Admitted During Fiscal Year	181	85	266	222	94	316
Total Number Treated	749	270	1,019	802	304	1,106
Number Discharged Recovered	46	31	59	61	19	80
Number Discharged Improved	31	34	65	33	33	66
Number Escaped	20	..	20	18	..	18
Deaths	67	15	82	69	20	89
Number Deported	1	..	1	..	..	..
Total Departures	165	62	227	181	72	253
Number Escapes Returned	4	..	4	8	..	8
Number in Asylum at Close of Fiscal Year	580	210	790	626	228	854

MARRIAGE LICENSES ISSUED AND DIVORCES GRANTED.

As Reported by the Clerks of the District Courts for the Years 1910 and 1911.

COUNTY.	Marriage Licenses Issued.		Divorces Granted Upon Complaint Of				Total Divorces Granted.		Percentage of Divorces Granted in Each County.		Percentage of Divorces Granted to Marriage Licenses Issued.	
			Wife.		Husband.							
	1910	1911	1910	1911	1910	1911	1910	1911	1910	1911	1910	1911
Beaverhead	82	62	6	8	2	5	8	13	1.14	1.47	9.75	20.97
Broadwater	14	22	2	3	..	..	2	3	.29	.34	14.28	13.63
Carbon	124	107	9	11	6	3	15	14	2.13	1.59	12.09	13.08
Cascade	433	383	24	70	7	11	31	81	4.41	9.20	7.13	21.14
Chouteau	122	147	7	15	3	6	10	21	1.43	2.38	8.19	14.28
Custer	175	215	21	25	5	10	26	35	3.67	3.98	14.85	16.18
Dawson	112	165	4	15	3	6	7	21	.99	2.38	6.25	12.72
Deer Lodge	101	92	5	11	5	2	10	13	1.43	1.47	9.90	10.41
Fergus	175	174	15	19	16	2	31	21	4.41	2.38	17.70	12.07
Flathead	240	233	36	37	20	16	56	53	7.95	6.02	23.33	22.61
Gallatin	165	168	21	31	2	7	23	38	3.27	4.32	13.93	22.62
Granite	11	3	..	1	..	..	..	1	..	.11	.00	33.33
Jefferson	29	38	4	..	5	..	9	..	1.28	.00	31.03	.00
Lewis and Clark	284	345	48	61	27	28	75	89	10.65	10.11	26.05	25.79
Lincoln	34	39	5	3	2	2	7	5	.99	.57	20.58	12.84
Madison	23	32	3	4	..	3	3	7	.43	.79	13.04	21.87
Meagher	30	31	1	3	..	..	1	3	.15	.34	3.33	9.68
Missoula	316	298	44	38	12	17	56	55	7.95	6.25	17.70	18.45
Musselshell	..	52	..	8	..	3	..	11	..	1.12	..	21.15
Park	125	122	17	36	9	7	26	43	3.67	4.89	20.80	35.24
Powell	38	66	2	9	..	5	2	14	.28	1.79	5.26	21.21
Ravalli	96	96	14	19	6	7	20	26	2.85	2.95	20.83	27.08
Rosebud	36	34	6	6	4	1	10	7	1.43	.79	27.77	20.59
Sanders	24	32	5	4	1	3	6	7	.85	.79	25.00	21.25
Silver Bow	793	764	131	138	55	46	186	184	26.42	20.90	23.53	24.08
Sweet Grass	26	37	6	4	..	..	6	4	.85	.45	23.07	10.81
Teton	48	62	3	3	4	3	7	6	.99	.69	14.58	9.67
Valley	221	187	..	22	..	8	20	30	2.85	3.40	9.05	16.04
Yellowstone	324	360	34	51	17	24	51	75	7.24	8.53	15.74	20.83
Total	4,201	4,366	473	655	211	225	704	880	100.00	100.00	16.75	20.15

NATUALIZATION.

Naturalization Papers Issued, as Reported by the Clerks of the District Courts.

COUNTY.	1910																Total.	1911																Total.
	Austria.	Belgium.	Canada.	Denmark.	England.	Finland.	Germany.	Ireland.	Italy.	Norway.	Russia.	Scotland.	Sweden.	All Others.		Austria.	Belgium.	Canada.	Denmark.	England.	Finland.	Germany.	Ireland.	Italy.	Norway.	Russia.	Scotland.	Sweden.	All Others.		
Beaverhead	2	....	....	2	....	..	1	1	1	....	....	....	2	1	10	2	..	1	4	..	....	....	....	....	1	....	....	3	1	12
Broadwater	....	....	....	....	....	..	....	....	....	....	....	1	....	....	1	....	..	....	....	....	....	....	....	....	....	....	1	1	....	2
Carbon	4	....	1	....	1	5	1	1	8	2	....	1	....	2	26	8	..	1	....	2	2	1	1	5	1	....	4	1	2	28
Cascade	2	....	2	....	2	4	2	3	..	5	....	1	6	1	28	17	..	10	3	2	3	7	2	1	8	....	2	2	2	60
Chouteau	1	....	2	....	2	..	7	1	....	4	....	1	....	6	27	....	..	2	....	....	....	3	....	1	2	....	4	2	2	19
Custer	....	....	3	....	1	..	1	3	....	4	1	3	1	1	18	....	..	1	1	3	....	3	1	....	8	1	2	6	....	26
Dawson	2	....	3	2	1	..	2	....	2	6	....	....	2	....	20	1	..	2	....	1	....	....	2	2	8	1	2	4	....	32
Deer Lodge	1	1	1	....	1	..	1	13	1	1	....	2	1	....	23	4	..	4	1	1	1	....	13	....	1	....	....	7	....	32
Fergus	2	....	8	1	5	..	4	4	1	4	1	3	2	1	36	1	..	1	....	3	....	5	1	2	4	2	4	3	5	31
Flathead	3	....	2	....	....	..	1	....	....	1	....	....	....	1	8	....	..	2	....	2	....	....	....	....	1	1	1	2	1	10
Gallatin	1	....	....	1	1	..	4	....	....	....	....	....	....	....	7	1	..	1	1	....	....	....	....	....	2	....	....	1	4	10
Granite	....	....	....	....	....	..	....	....	....	....	....	1	1	....	2	....	..	....	....	....	1	....	....	....	....	....	....	1	....	2
Jefferson	....	....	....	....	....	..	....	....	....	....	....	....	....	1	1	2	..	3	....	....	1	....	....	....	....	....	....	1	....	7
Lewis and Clark	3	....	1	1	....	..	1	2	..	1	1	....	3	3	16	4	1	3	1	2	....	3	....	1	2	....	....	5	1	23
Lincoln	1	....	2	....	....	..	1	....	1	....	....	1	....	....	6	1	..	2	....	....	....	1	....	....	....	....	....	1	....	5
Madison	1	....	....	....	....	..	1	....	....	....	....	....	1	1	4	....	..	....	....	2	....	2	....	....	....	....	....	1	....	5
Meagher	....	....	....	....	....	..	....	....	....	1	....	1	....	....	2	....	..	....	....	....	....	....	....	....	2	....	....	....	1	3
Missoula	....	....	1	....	1	..	4	1	....	7	....	....	9	....	23	....	..	5	2	2	....	1	....	1	9	....	....	15	6	41
*Musselshell	....	....	....	....	....	..	....	....	....	....	....	....	....	....	....	4	..	1	....	1	....	1	....	....	2	1	3	1	1	15
Park	2	....	1	....	3	..	1	....	2	1	....	1	3	2	16	5	..	1	....	2	....	2	1	2	5	....	....	2	....	20
Powell	....	....	....	....	....	..	2	....	....	1	....	....	....	....	3	....	..	2	1	2	....	....	....	....	1	....	....	....	....	6
Ravalli	....	....	4	....	....	3	1	....	....	....	....	....	2	....	10	....	..	1	....	....	1	....	3	1	....	....	....	2	2	9
Rosebud	....	....	1	....	....	..	....	....	1	6	....	1	1	....	10	3	1	1	....	....	....	....	1	....	8	....	1	1	2	18
Sanders	....	....	2	....	2	..	....	....	....	3	....	....	....	1	8	....	..	2	....	1	....	1	....	....	1	....	....	1	....	6
Silver Bow	2	....	4	....	8	2	2	21	1	....	3	....	3	3	49	2	1	6	1	8	5	3	17	....	13	3	1	5	7	72
Sweet Grass	....	....	1	....	....	..	2	....	....	10	....	....	1	....	14	....	..	....	....	1	..	....	....	....	7	....	....	....	....	8
Teton	....	....	3	....	2	..	2	....	....	2	1	1	....	3	14	1	..	3	....	3	....	....	....	....	2	....	....	....	10	19
Valley	....	....	3	2	5	..	2	1	....	5	....	1	2	2	23	2	..	12	7	3	1	5	....	1	13	1	....	....	3	48
Yellowstone	4	....	....	1	8	..	9	....	....	1	1	....	....	....	24	4	..	1	....	2	....	5	1	2	1	4	1	....	3	24
Total	31	1	45	10	46	14	52	51	18	55	8	19	40	29	429	62	3	68	22	46	15	43	42	20	102	14	26	68	53	584

*Musselshell County created in 1911.

REVENUE FROM LICENSES.

Revenue from Licenses for the Fiscal Year Ended Nov. 30, 1910, as Reported by the County Treasurers.

COUNTY.	Billiard Tables.	Bottling Works.	Bowling Alleys.	Brewers.	Laundries.	Cigarette Selling.	Intelligence Offices.	Liquor Selling. Retail.	Liquor Selling. Wholesale.
Beaverhead	$112.50	.....	$40.00	$82.50	.....	.....	.....	$15,785.00	$528.00
Broadwater	.....	.....	.....	.....	.....	.....	.....	6,270.00	.....
Carbon	60.00	$100.00	.....	.....	.....	$40.00	.....	20,295.00	.....
Cascade	405.00	240.00	.....	600.00	.....	610.00	$10.00	59,994.00	.....
Chouteau	.....	.....	5.00	.....	$80.00	.....	.....	34,683.00	.....
Custer	375.00	75.00	.....	.....	90.00	610.00	20.00	19,711 00	150.00.
Dawson	142.50	.....	.....	.....	50.00	70.00	.....	14,718.00	.....
Deer Lodge	168.75	.....	.....	225.00	50.00	280.00	.....	28,050.00	.....
Fergus	325.25	25.00	20.00	75.00	.....	610.00	.....	31,746.00	.....
Flathead	825.00	.....	40.00	90.00	.....	250.00	20.00	22,513.33	.....
Gallatin	412.50	.....	65.00	135.00	110.00	250.00	30.00	16,500.00	.....
Granite	52.50	.....	.....	125.00	.....	.....	.....	6,695.00	.....
Jefferson	360.00	.....	.....	.....	.....	.....	.....	15,565.00	.....
Lewis & Clark	356.25	120.00	45.00	580.00	60.00	211.00	110.00	45,056.00	.....
Lincoln	224.80	.....	.....	.....	.....	10.00	.....	6,160.00	.....
Madison	37.50	.....	.....	60.00	.....	.....	.....	14,025.00	.....
Meagher	206.25	.....	10.00	.....	.....	10.00	.....	10,670.00	.....
Missoula	543.60	80.00	.....	550.00	.....	500.00	110.00	46,750.00	1,875.00
Park	225.00.	.....	35.00	.....	.....	220.00	.....	22,660.00	150.00
Powell	285.00	.....	.....	45.00	80.00	90.00	.....	10,615.00	.....
Ravalli	582.50	.....	15.00	.....	.....	620.00	.....	11,462.00	.....
Rosebud	108.75	.....	.....	.....	.....	120.00	.....	3,894.00	150.00
Sanders	68.50.	.....	.....	.....	.....	.....	.....	6,270.00	.....
Silver Bow	821.25	300.00	.....	975.00	710.00	2,430.00	230.00	142,263.00	2,205.00
Sweet Grass	90.00	.....	.....	.....	30.00	.....	.....	6,325.00	150.00
Teton	353.75	.....	30.00	.....	.....	.....	.....	18,388.99	.....
Valley	97.50	.....	.....	.....	30.00	.....	10.00	20,680.00	375.00
Yellowstone	751.25	.....	50.00	.....	.....	740.00	90.00	36,080.00	.....
The State	$7,990.90	$940.00	$355.00	$3,542.50	$1,320.00	$7,571.00	$700.00	$693,824.32	$5,583.00

REVENUE FROM LICENSES.

Revenue from Licenses for the Fiscal Year Ended Nov. 30, 1910, as Reported by the County Treasurers.

COUNTY.	Pawnbrokers and Peddlers.	Power and Light Companies.	Shows and Circuses.	Shooting Galleries.	Telegraphs and Telephones.	Theaters.	Water Companies.	All Others.	Total.
Beaverhead	$75.00	$50.00	.....	$12.50	$145.50	90.00	.....	$30.00	$16,951.00
Broadwater	12.50	.....	$10.00	.....	.....	.....	.....	.....	6,292.50
Carbon	62.50	.....	44.00	.....	.....	50.00	.....	.....	20,651.50
Cascade	167.50	350.00	135.00	30.00	611.25	400.00	.....	200.00	63,752.75
Chouteau	50.00	50.00	373.00	.....	199.50	.....	.....	398.75	35,839.25
Custer	125.00	.....	10.00	15.00	623.25	264.00	.....	50.00	22,328.25
Dawson	12.50	.....	20.00	.....	.....	.....	.....	.....	15,013.00
Deer Lodge	75.00	100.00	125.00	.....	474.00	400.00	$200.00	550.00	30,717.75
Fergus	.....	100.00	265.00	60.00	324.00	100.00	.....	262.50	33,912.75
Flathead	12.50	100.00	125.00	.....	240.75	375.00	200.00	6.00	24,797.58
Gallatin	62.50	100.00	87.00	45.00	1,548.00	237.50	50.00	490.00	20,152.50
Granite	25.00	.....	.....	15.00	6.75	73.00	.....	.....	6,992.25
Jefferson	.....	.....	.....	.....	35.25	89.00	.....	100.00	16,149.25
Lewis & Clark	502.50	400.00	25.00	15.00	1,083.00	425.00	400.00	280.00	49,698.75
Lincoln	.....	.....	.....	.....	.....	59.00	.....	.....	6,453.80
Madison	62.50	.....	98.50	.....	143.25	.....	100.00	145.00	14,671.75
Meagher	50.00	20.00	.....	.....	.....	.....	.....	.....	10,966.25
Missoula	162.50	200.00	422.00	45.00	.....	275.00	400.00	200.00	52,153.10
Park	25.00	100.00	130.00	30.00	.....	275.00	200.00	.....	24,050.00
Powell	37.50	.....	.....	15.00	97.50	138.00	50.00	20.00	11,473.00
Ravalli	150.00	50.00	125.00	45.00	252.75	235.00	100.00	.....	13,637.25
Rosebud	12.50	.....	20.00	.....	150.00	177.25	.....	.....	4,632.50
Sanders	.....	.....	12.00	.....	.....	.....	100.00	5.00	6,455.50
Silver Bow	1,115.00	600.00	385.00	15.00	3,817.00	900.00	700.00	1,120.00	158,586.25
Sweet Grass	25.00	.....	20.00	15.00	.....	.....	.....	10.00	6,665.00
Teton	50.00	.....	11.00	.....	284.75	.....	.....	125.00	19,243.49
Valley	12.50	.....	329.00	.....	248.25	.....	.....	45.00	21,827.25
Yellowstone	270.00	300.00	177.00	30.00	1,085.25	425.00	.....	350.00	40,348.50
The State	$3,155.00	$2,500.00	$2,968.50	$387.50	$11,370.00	$4,987.75	$2,500.00	$4,387.25	$754,402.72

REVENUE FROM LICENSES.

Revenue from Licenses for the Fiscal Year Ended Nov. 30, 1911, as Reported by the County Treasurers.

COUNTY.	Billiard Tables.	Bottling Works.	Bowling Alleys.	Brewers.	Cigarette Selling.	Intelligence Offices.	Laundries.	Liquor Selling.	Retail Liquor Selling, Wholesale.
Beaverhead	$225.00	.....	.....	$102.50	.....	.....	.....	$14,707.00	$1,056.00
Broadwater	183.75	.....	.....	40.00	$70.00	.....	.....	6,380.00	.....
Carbon	247.50	$50.00	.....	.....	.....	.....	.....	23,980.00	.....
Cascade	296.25	60.00	.....	600.00	640.00	.....	.....	61,410.00	.....
Chouteau	220.75	.....	.....	.....	.....	.....	$100.00	34,654.40	.....
Custer	390.00	50.00	$40.00	.....	810.00	$40.00	70.00	22,066.00	225.00
Dawson	292.50	.....	.....	.....	363.75	.....	40.00	18,639.00	.....
Deer Lodge	333.75	.....	5.00	180.00	340.00	.....	40.00	27,225.00	.....
Fergus	533.50	50.00	20.00	135.00	680.00	.....	.....	25,410.00	264.00
Flathead	862.50	.....	10.00	90.00	260.00	.....	.....	21,230.00	.....
Gallatin	588.75	40.00	45.00	225.00	390.00	40.00	170.00	17,380.00	.....
Granite	153.75	.....	.....	60.00	.....	.....	.....	7,920.00	.....
Jefferson	401.25	.....	.....	.....	.....	.....	.....	15,620.00	.....
Lewis & Clark	401.25	120.00	30.00	570.00	1,130.00	100.00	.....	42,249.00	1,212.00
Lincoln	217.50	.....	.....	.....	10.00	.....	.....	6,820.00	.....
Madison	45.00	.....	.....	60.00	60.00	.....	.....	13,475.00	.....
Meagher	330.00	.....	.....	.....	60.00	.....	.....	11,220.00	.....
Missoula	887.80	120.00	30.00	735.00	830.00	190 00	.....	48,070.00	3,300.00
Musselshell	180.00	25.00	.....	.....	100.00	.....	.....	11,286.00	.....
Park	296.25	.....	30.00	.....	150.00	.....	.....	22,695.00	150.00
Powell	266.25	.....	.....	60.00	220.00	.....	60.00	9,130.00	.....
Ravalli	877.50	.....	20.00	.....	760.00	.....	.....	11,440.00	.....
Rosebud	195.50	.....	.....	.....	40.00	.....	.....	5,643.00	75.00
Sanders	281.21	.....	.....	.....	.....	.....	.....	6,985.00	.....
Silver Bow	743.25	420.00	20.00	975.00	2,840.00	220.00	730.00	144,139.00	150.00
Sweet Grass	101.25	.....	.....	.....	160.00	.....	.....	4,972.00	450.00
Teton	510.00	.....	30.00	.....	50.00	.....	.....	18,535.00	.....
Valley	312.50	.....	.....	.....	.....	.....	90.00	22,935.00	225.00
Yellowstone	1,160.00	.....	40.00	300.00	960.00	110.00	30.00	35,365.00	75.00
Total	$11,564.51	$935.00	$320.00	$4,132.50	$10,923.75	$700.00	$1,330.00	$711,580.40	$7,182.00

REVENUE FROM LICENSES.

Revenue from Licenses for the Fiscal Year Ended Nov. 30, 1911, as Reported by the County Treasurers.

COUNTY.	Pawnbrokers and Peddlers.	Power and Light Companies.	Shows and Circuses.	Shooting Galleries.	Telegraphs and Telephones.	Theaters.	Water Companies.	All Others.	Total.
Beaverhead	$12.50	$50 00	$30.00	$30.00	$156.75	.....	.....	$270.00	$16,669 75
Broadwater	12.50	.....	8.00	15.00	40.50	.....	.....	25.00	6,774.75
Carbon	87.50	50.00	10.00	15.00	54.75	.....	.....	55.00	24,549.75
Cascade	.....	.....	250.00	.....	910.50	$575.00	.....	787.00	65,529.25
Chouteau	25.00	200.00	75.00	.....	100.00	38.80	.....	135.00	35,548.95
Custer	125.00	.....	150.00	15.00	.....	277.00	.....	10.00	24,268.00
Dawson	.. ..	50.00	160.00	.....	100.00	25.00	.....	20.00	19,690.25
Deer Lodge	25.00	200.00	125.00	.....	725.50	200.00	$400.00	565.00	30,364.25
Fergus	50.00	100 00	125.00	.....	200.00	304.00	.....	30.00	27,901.50
Flathead	12.50	200.00	40.00	15.00	340.50	500.00	250.00	10.00	23,820.50
Gallatin	125.00	100.00	200.00	45.00	500.00	300.00	50.00	400.00	20,598.75
Granite	.....	.....	63.00	15.00	13.50	.....	.....	40.00	8,265.25
Jefferson	150.00	.....	.....	.....	75.00	25.00	.....	.....	16,271.25
Lewis & Clark	527.50	400.00	280.00	.....	1,295.00	475.00	400.00	330.00	49,519.75
Lincoln	.....	.....	50.00	.....	.....	24.00	.....	10.00	7,131.50
Madison	.....	.....	125.50	.....	159.00	.....	100.00	130.00	14,154.50
Meagher	.....	.....	125.00	.....	2.25	10.00	.....	.....	11,747.25
Missoula	237.50	200.00	275.00	.....	1,543.75	300.00	400.00	275.00	57,394.05
Muselshell	75.00	50.00	10.00	.....	100.00	125.00	100.00	.....	12,051.00
Park	.....	100.00	160.00	30.00	1,744.75	250.00	200.00	.....	25,806 00
Powell	75.00	.....	25.00	.....	78.75	100.00	50.00	.....	10,065.00
Ravalli	.....	50.00	250.00	.....	200.00	430.00	100.00	95.00	14,222.50
Rosebud	237.50	.....	15.00	.....	.....	116.55	.....	10.00	6,332.55
Sanders	.....	.....	5.00	.....	.....	.....	100.00	20.00	7,391.21
Silver Bow	1,020.00	600.00	280.00	15.00	1,340.25	900.00	500.00	1,574.13	156,466.63
Sweet Grass	50.00	.....	5.00	.....	61.50	.....	.....	.....	5,799.75
Teton	12.50	.....	95.00	.....	.....	.....	100.00	180.00	19,512.50
Valley	250.00	.. ...	135.00	.....	58.50	.....	.....	79.60	24,085 00
Yellowstone	245.00	200.00	72.50	30.00	1,297.25	375.00	400 00	50.00	40,691.75
The State	$3,355.00	$2,550.00	$3,144.00	$225.00	$11,098.00	$5,350 35	$3,150.00	$5,100.63	$782,623.14

ASSESSED VALUATION.

Total Assesed Valuation of Horses for the Year 1911.

COUNTY.	Thoroughbred.		Range.		Common.		Total Value.
	No.	Value.	No.	Value.	No.	Value.	
Beaverhead	116	$29,405	7,276	$256,025	3,891	$230,867	$516,297
Broadwater	41	11,800	2,567	80,160	1,956	104,680	196,640
Carbon	...	.....	3,992	130,840	4,277	231,475	362,315
Cascade	116	36,320	4,708	168,950	6,551	350,160	555,430
Chouteau	166	43,460	8,909	313,791	8,410	575,608	932,859
Custer	203	36,495	24,956	826,073	7,419	406,870	1,269,438
Dawson	123	24,275	14,529	568,765	7,342	577,810	1,170,850
Deer Lodge	266	11,115	913	27,170	1,037	50,010	88,295
Flathead	42	8,955	2,791	96,875	2,880	147,610	253,440
Fergus	100	24,495	6,540	229,135	8,148	449,270	702,900
Gallatin	62	26,720	3,643	135,320	6,514	342,955	504,995
Granite	55	8,875	2,683	65,950	1,148	61,225	136,050
Jefferson	15	5,900	1,832	64,405	1,205	88,995	159,300
Lewis & Clark	74	18,375	2,759	96,095	2,937	160,115	274,585
Lincoln	9	2,150	491	15,505	498	25,375	43,030
Madison	60	23,150	5,097	146,965	3,832	198,455	368,570
Meagher	34	9,375	2,716	81,595	2,056	103,080	194,050
Missoula	32	6,275	2,049	71,775	2,996	158,270	236,320
Musselshell	53	16,475	3,077	111,200	2,260	160,265	287,940
Park	108	17,550	3,358	114,375	3,559	263,765	395,690
Powell	100	13,200	2,601	90,965	1,652	82,600	186,765
Ravalli	67	8,950	2,517	86,985	2,969	143,910	239,845
Rosebud	58	17,500	7,086	256,230	5,002	285,228	558,958
Sanders	9	4,300	678	23,595	924	47,225	75,120
Silver Bow	39	4,130	942	32,300	2,085	105,455	141,885
Sweet Grass	45	15,050	2,379	83,275	2,329	139,855	238,180
Teton	21	10,500	6,111	213,885	4,484*	279,680	504,065
Valley	41	20,500	9,457	342,283	8,601*	451,215	813,998
Yellowstone	25	8,350	2,151	76,490	4,649	258,010	342,850
State	2,020	$463,645	138,808	$4,806,977	111,591	$6,480,038	$11,750,660

*Includes other grades.

ASSESSED VALUATION.

Total Assessed Valuation of Cattle for the Year 1911.—(Continued.)

COUNTY.	Cows.		Stock Cattle.		Total Value.
	No.	Value.	No.	Value.	
Beaverhead	1,120	$33,065	21,938	$421,627	$1,097,954
Broadwater	959	28,780	5,922	106,698	169,358
Carbon	1,914	47,850	11,008	198,360	284,245
Cascade	3,600	106,622	.....	.....	676,613
Chouteau	2,423	68,083	29,664	526,422	599,790
Custer	1,756	44,085	86,178	1,579,254	1,748,512
Dawson	2,141	61,432	17,233	314,054	448,829
Deer Lodge	1,072	31,990	1,374	24,738	71,083
Fergus	2,020	60,709	28,630	515,454	608,855
Flathead	2,374	60,855	4,777	84,820	162,800
Gallatin	2,979	74,475	.....	192,350	275,765
Granite	849	21,225	5,457	98,226	225,241
Jefferson	1,206	45,480	4,322	85,540	209,078
Lewis & Clark	2,018	51,710	18,616	322,695	389,685
Lincoln	269	8,150	683	11,870	26,945
Madison	1,799	45,675	17,501	316,925	408,335
Meagher	529	13,225	13,280	212,480	266,635
Missoula	1,779	54,675	2,113	39,096	128,491
Musselshell	869	28,190	7,947	163,518	197,015
Park	1,972	58,655	8,604	160,115	251,605
Powell	1,049	31,470	11,068	198,828	311,068
Ravalli	2,217	59,383	1,117	34,419	138,582
Rosebud	1,027	25,693	71,182	1,282,198	1,557,279
Sanders	575	14,905	945	16,990	55,618
Silver Bow	2,093	83,640	993	19,065	113,745
Sweet Grass	1,518	45,160	7,820	158,766	317,216
Teton	1,539	38,475	13,352	240,336	423,211
Valley	.....	.....	17,708	318,755	416,895
Yellowstone	2,380	61,040	8,598	155,129	277,984
State	45,946	$1,304,697	428,154	$7,798,728	$11,858,432

ASSESSED VALUATION.

Total Assessed Valuation of Cattle for the Year 1911.

COUNTY.	Beef.		Yearlings.		Two-Year-Olds.		Three-Year-Olds.	
	No.	Value.	No.	Value.	No.	Value	No.	Value.
Beaverhead	5,116	$204,515	7,645	$77,232	8,282	$129,125	7,619	$232,390
Broadwater	98	3,015	1,507	15,070	821	12,375	124	3,420
Carbon	221	6,855	1,686	16,860	941	11,320	.....	.....
Cascade	201	8,600	506	5,060	222	3,330	30,340	553,001
Chouteau	110*	5,285	.....	.....	.....	.....	.....	.....
Custer	240*	10,025	2,063	20,645	1,311	19,723	2,491	74,780
Dawson	651	18,560	2,600	26,135	2,088	28,648	.....	.....
Deer Lodge	.....	.....	464	4,640	356	5,415	124	4,300
Fergus	88*	2,645	435	4,353	235	3,765	731	21,929
Flathead	288	2,240	736	7,210	660	9,915	.....	.....
Gallatin	398	8,940	.....	.....	.....	.....	.....	.....
Granite	571*	22,800	2,194	21,940	2,106	31,590	982	29,460
Jefferson	25*	950	2,527	31,358	1,960	36,230	305	9,520
Lewis & Clark	.....	.....	484	5,165	435	7,595	67	2,520
Lincoln	.....	.....	297	2,945	221	3,125	22	555
Madison	578	21,800	2,372	23,855	5	80	.....	.....
Meagher	219*	8,460	3,247	32,470	.....	.....	.....	.....
Missoula	28	1,400	1,327	13,276	965	15,654	152	4,390
Musselshell	42*	1,140	136	1,499	26	573	60	2,095
Park	165	6,000	1,634	20,135	327	6,700	.....	.....
Powell	1,128	45,570	2,701	27,010	516	8,190	.....	.....
Ravalli	.....	.....	1,579	15,785	1,161	17,345	373	11,650
Rosebud	.....	.....	265	3,321	428	8,038	10,087	238,029
Sanders	.....	.....	621	6,210	472	7,108	350	10,260
Silver Bow	6	210	488	4,955	327	4,860	33	1,015
Sweet Grass	.....	.....	2,879	28,790	2,378	35,670	1,618	48,830
Teton	3,895	134,500	558	5,580	288	4,320	.....	.....
Valley	.....	.....	1,241	12,410	717	10,730	2,500	75,000
Yellowstone	1,426	46,965	801	8,010	456	6,840	.....	.....
State	15,218*	$560,380	42,992	$441,919	27,737	$431,564	57,978	$1,323,144

*Thoroughbreds 842, graded, 25. §Buffalo 20. Elk 8.

ASSESSED VALUATION.

Total Assessed Valuation of Sheep for the Year 1911.

COUNTY.	Sheep.		Lambs.		Rams.		Total Value.
	No.	Value.	No.	Value.	No.	Value.	
Beaverhead	163,220	$424,849	.....	.....	2,480	$13,215	$438,064
Broadwater	53,578	134,587	1,652	$4,130	446	2,230	140,947
Carbon	157,699	395,322	.....	.....	483	2,415	397,737
Cascade	146,718	372,846	.....	.....	897	4,485	377,331
Chouteau	645,686	1,634,670	.....	.....	5,159	27,445	1,662,115
Custer	428,060	1,095,600	.....	.....	4,012	20,060	1,115,660
Dawson	294,200	734,931	43,385	86,929	1,928	9,835	831,695
Deer Lodge	3,250	8,125	.....	.....	26	130	8,255
Fergus	356,400	891,017	.....	.....	2,116	10,583	901,600
Flathead	2,046	5,270	.....	.....	.....	.....	5,270
Gallatin	22,426	56,218	.....	.....	86	432	56,650
Granite	12,487	31,218	.....	.....	124	620	31,838
Jefferson	3,300	9,900	1,200	4,000	50	250	14,150
Lewis & Clark	147,009*	368,245	.....	.....	.....	.....	368,245
Lincoln	.....	.....	.....	.....	.....	.....	.....
Madison	132,014	330,145	.....	.....	2,098	10,490	340,635
Meagher	249,782	499,564	.....	.....	2,556	12,780	512,344
Missoula	2,835	8,550	.....	.....	.....	.....	8,550
Musselshell	175,402	435,665	.....	.....	1,049	5,320	440,985
Park	88,083	225,045	.....	.....	583	2,820	227,865
Powell	91,926	230,814	.....	.....	587	2,935	233,749
Ravalli	17,773	49,805	2,000	5,000	140	700	55,505
Rosebud	312,508	775,497	2,520	5,040	1,102	7,603	788,140
Sanders	23	59	.....	.....	.....	.....	59
Silver Bow	13,565	34,360	.....	.....	.....	.....	34,360
Sweet Grass	231,532	578,332	44,140	101,351	2,945	14,725	694,408
Teton	197,450	493,625	27,350	54,700	1,765	8,825	557,150
Valley	208,708	523,670	22,950	45,900	1,035	5,175	574,745
Yellowstone	219,470	537,200	.....	.....	1,505	7,525	544,725
The State	4,377,150	$10,885,129	145,197	$307,050	33,372	$170,598	$11,362,777

*Includes Goats and Rams.

ASSESSED VALUATION.

Total Assessed Valuation of Hogs and Goats for the Year 1911.

COUNTY.	Hogs.		Goats.	
	No.	Value.	No.	Value.
Beaverhead	744	$4,903	.....	.....
Broadwater	890	4,455	3	$15
Carbon	1,242	6,210	.....	.....
Cascade	2,010	10,270	.....	.....
Chouteau	830	4,232	.....	.....
Custer	1,379	8,926	2	6
Dawson	1,619	10,317	.....	.....
Deer Lodge	400	2,977	2	6
Fergus	2,321	11,606	.....	.....
Flathead	1,175	7,102	.....	.....
Gallatin	1,836	10,565	.....	.....
Granite	372	1,860	311	622
Jefferson	287	1,488	181	905
Lewis & Clark	614	3,095	.....	.....
Lincoln	213	1,075	.....	.....
Madison	993	9,930	15	130
Meagher	660	3,300	2	6
Missoula	1,440	7,231	.....	.....
Musselshell	829	4,270	.....	.....
Park	1,481	10,280	.....	.....
Powell	356	1,830	.....	.....
Ravalli	2,209	11,165	.....	.....
Rosebud	615	3,874	75	188
Sanders	205	1,135	.....	.....
Silver Bow	657	3,305	.....	.....
Sweet Grass	465	2,332	840	2,100
Teton	416	2,080	.....	.....
Valley	1,064	5,320	22	56
Yellowstone	1,199	5,995	.....	.....
Totals	28,521	$161,128	1,453	$4,034

TOTAL MILEAGE AND ASSESSED VALUATION OF RAILROADS IN THE STATE FOR THE YEAR 1911.

RAILROADS.	Mileage Main Line.	Value per Mile.	Value.	Mileage Side-Tracks.	Value per Mile.	Value Side-Tracks.	Value Main Line and Side-Tracks.	By Systems.
C., B. & Q. R. R.—Huntley Branch	101.74	$12,500	$1,271,750	27.50	$1,250	$34,375	$1,306,125	
Toluca	85.54	125	10,693	*	*	*	10,693	
Frannie Fromberg	29.92	8,200	245,344	4.83	820	3,961	249,305	$1,566,123
Butte, Anaconda & Pacific	25.30	19,925	504,103	51.56	1,992	102,708	606,811	
Spurs	19.68	14,000	275,520	18.00	1,400	25,200	300,720	
Stuart Branch	8.94	2,500	22,350	4.58	250	1,145	23,495	931,026
Chicago, Milwaukee & Puget Sound	734.79	14,000	10,287,060	177.75	1,400	248,850	10,535,910	
Harlowton to Lewiston	62.42	10,000	624,200	6.96	1,000	6,960	631,160	
Ringling Branch	3.63	5,000	18,150	2.00	500	1,000	19,150	11,186,220
Great Northern (Main Line)	677.12	19,925	13,491,616	154.81	1,992	308,382	13,799,998	
Double Track	14.38	23,925	344,042	.....	.....	.....	344,042	
Bainville Branch	53.19	5,000	265,950	4.41	500	2,205	268,155	
Billings Branch	194.06	15,000	2,910,900	34.83	1,500	52,245	2,963,145	
Barker Branch	10.79	125	1,349	.....	.....	.....	1,349	
Fair Ground Spur	00.68	500	340	0.15	50	8	348	
Fernie Branch	8.86	5,000	44,300	1.99	500	995	45,295	
Havre to Butte Branch	289.51	19,925	5,768,487	86.10	1,992	171,511	5,939,998	
Kalispell Branch	15.63	15,000	234,450	8.61	1,500	12,915	247,365	
Marion Spur	25.36	2,000	50,720	1.78	200	356	51,076	..
Mountain View Spur	3.32	8,000	26,560	0.70	800	560	27,120	
Neihart Branch	38.34	5,000	191,700	3.80	500	1,900	193,600	
Sand Coulee Branch	10.48	10,000	104,800	3.91	1,000	3,910	108,710	
Shelby to Armington Branch	126.53	15,000	1,898,700	28.15	1,500	42,225	1,940,925	
Somer's Spur	10.45	5,000	52,250	2.92	500	1,460	53,710	
Sweet Grass Branch	36.31	5,000	181,550	1.39	500	695	182,245	$26,168,551
Red Mountain Spur	1.47	1,000	1,470	.....	.....	.....	1,470	
Northern Pacific (Main Line)	637.82	19,925	12,708,565	369.55	1,992	736,144	13,444,709	
Double Track	139.03	23,925	3,326,293	.....	.....	.....	3,326,293	
Bitter Root Branch	47.37	15,000	710,550	9.85	1,500	14,775	725,325	
Bitter Root Branch Extension	18.10	3,000	54,300	8.73	300	2,619	56,919	
Boulder Branch	7.89	2,500	19,725	1.63	250	408	20,133	
Butte Branch	70.93	19,925	1,413,280	33.18	1,992	66,095	1,479,375	
Double Track	0 26	23,925	6,221	.....	.....	.....	6,221	
Clark's Fork Branch	19.71	15,000	295,650	10.82	1,500	16,230	311,880	
Coeur d'Alene Branch	109.58	12,000	1,314,960	17.57	1,200	21,084	1,336,044	

TOTAL MILEAGE AND ASSESSED VALUATION OF RAILROADS IN THE STATE FOR THE YEAR 1911.—(Concluded.)

RAILROADS.	Mileage Main Line.	Value per Mile.	Value.	Mileage Side-Tracks.	Value per Mile.	Value Side-Tracks.	Value Main Line and Side-Tracks.	By Systems.
Elkhorn Branch	20.13	3,000	60,390	2.05	300	615	61,005	
Gaylord & Ruby Valley	45.72	11,000	502,920	5.30	1,100	5,830	508,750	
Marysville Branch	12.58	6,000	75,480	1.46	600	876	76,356	
Montana Union Branch	50.71	19,925	1,010,387	23.73	1,992	47,270	1,057,667	
Double Track	1.69	23,925	40,433	.....	.....	.....	40,433	
Butte Hill Spur	6.66	6,000	39,960	8.71	600	5,226	45,186	
Park Branch	54.26	10,000	542,600	8.23	1,000	8,230	550,830	
Philipsburg Branch	25.94	5,200	134,888	4.15	520	2,158	137,046	
Pony Branch	6.65	6,000	39,900	00.40	600	240	40,140	
Red Bluff Branch	20.99	5,000	104,950	2.57	500	1,285	106,235	
Red Mountain Branch	16.51	1,500	24,765	4.42	150	663	25,428	
Rocky Fork Branch	44.27	15,750	697,253	15.72	1,575	24,759	722,012	
Shields River	22.90	5,000	114,500	2.46	500	1,230	115,730	
St. Regis Cut-Off	21.85	10,506	229,425	8.29	1,050	8,705	238,130	
Wickes Branch	3.91	1,500	5,865	11.25	150	188	6,053	25,437,900
Oregon Short Line Railroad	125.79	19,925	2,506,366	30.01	1,992	59,780	2,566,146	
Yellowstone Park Railroad	9.53	10,000	95,300	1.67	1,000	1,670	96,970	2,663,116
Yellowstone Park Railway	11.00	2,000	22,000	0.95	200	190	22,190	22,190
								$66,975,126

*Right of way only Assessed.

TOTAL VALUATION OF ALL PROPERTY IN THE STATE FOR THE YEAR 1911.

COUNTY.	Valuation Fixed by the Assessors of the Various Counties and Equalized by the Boards of County Commissioners.						Valuation Fixed by State Board of Equalization.	Total Valuation of County.
	Acres of Land.	Value of Same.	All Other Real Estate.	Live-Stock.	All Other Personal Property.	Total Real and Personal Property.	Railroad Valuation.	
Beaverhead	463,696	$1,706,792	$2,130,207	$2,057,218	$937,577	$6,831,794	$1,772,279	$8,604,073
Broadwater	251,419	849,912	493,407	511,415	409,423	2,264,157	1,118,464	3,382,621
Carbon	273,341	2,304,331	1,585,665	1,050,507	1,216,888	6,157,394	1,264,819	7,422,213
Cascade	1,087,780	5,753,296	8,762,428	1,619,644	5,147,688	21,283,056	2,888,839	24,171,895
Chouteau	703,592	3,460,607	2,992,582	3,198,996	2,563,430	12,215,615	5,610,792	17,826,407
Custer	1,980,454	6,130,776	2,811,750	4,142,542	1,774,626	14,859,694	3,394,567	18,254,261
Dawson	1,544,104	3,436,538	1,603,756	2,461,691	1,120,029	8,622,014	1,305,232	9,927,246
Deer Lodge	148,001	406,106	5,177,151	170,616	2,139,575	7,893,448	920,024	8,813,472
Flathead	746,567	3,714,589	2,167,995	430,852	1,819,488	8,132,915	2,406,362	10,539,277
Fergus	1,222,097	5,787,833	3,027,659	2,221,961	2,286,667	13,327,120	1,350,600	14,677,720
Gallatin	714,402	5,522,515	3,680,185	847,975	1,806,995	11,857,670	2,417,979	14,275,649
Granite	214,519	609,400	652,732	395,611	281,872	2,039,615	1,229,918	3,269,533
Jefferson	239,067	745,274	1,087,499	384,921	1,079,947	3,297,641	2,636,438	5,934,079
Lewis & Clark	627,792	1,926,445	10,664,050	1,035,610	5,374,805	19,000,910	1,920,219	20,931,129
Lincoln	506,257	2,092,419	282,050	71,050	319,080	2,764,599	2,477,965	5,242,564
Madison	506,542	1,418,850	1,855,952	1,127,600	1,272,960	5,675,362	756,064	6,431,426
Meagher	895,710	3,361,963	1,149,320	976,335	866,754	6,354,372	2,012,992	8,367,364
Missoula	827,441	2,861,139	5,812,183	380,592	3,256,405	12,310,319	5,160,130	17,470,449
Musselshell	865,169	4,438,823	1,034,533	930,210	851,183	7,254,749	1,799,821	9,054,570
Park	596,978	2,266,701	2,936,755	885,440	1,516,215	7,605,111	1,410,126	9,015,237
Powell	665,737	1,781,469	969,190	733,412	699,995	4,187,066	1,879,933	6,066,999
Ravalli	373,000	2,286,467	1,831,280	445,097	1,020,889	5,583,733	510,369	6,094,102
Rosebud	1,178,488	3,120,482	868,302	2,908,439	618,650	7,515,873	3,474,237	10,990,110
Sanders	318,818	1,170,415	539,548	131,932	352,028	2,193,923	2,622,385	4,816,308
Sweet Grass	679,874	2,078,722	660,969	1,254,236	700,269	4,694,196	1,065,622	5,759,818
Silver Bow	108,163	356,765	19,654,340	293,295	14,007,285	34,311,685	2,393,476	36,705,161
Teton	496,839	2,405,244	1,439,832	1,486,506	1,183,457	6,515,039	3,285,097	9,800,136
Valley	179,744	561,701	1,671,582	1,811,014	1,404,976	5,449,273	4,400,660	9,849,933
Yellowstone	688,280	4,576,134	5,945,565	1,171,554	2,803,696	14,496,949	3,479,717	17,976,666
Totals	19,167,871	$77,134,702	$93,488,467	$35,139,271	$58,932,852	$264,695,292	$66,975,126	$331,670,418

RATE OF TAXATION, ASSESSED VALUATION AND VALUATION OF COUNTY PROPERTY OF THE 29 COUNTIES OF MONTANA, FOR THE FISCAL YEAR 1911.

COUNTY.	Rate of County Taxation, Mills, Except Specials.	Assessed Value.	Estimated Value of County Property.	Class.
Beaverhead	25.00	$8,613,423	$180,000	5
Broadwater	22.75	3,383,945	45,500	7
Carbon	23.75	7,422,213	142,700	6
Cascade	19.50	24,171,895	560,134	2
Chouteau	16.25	17,826,407	456,000	3
Custer	23.00	18,251,854	338,900	3
Dawson	.....	9,925,793	295,690	5
Deer Lodge	22.50	8,793,997	168,225	5
Fergus	23.75	14,677,720	235,500	4
Flathead	21.25	10,542,510	190,000	5
Gallatin	17.75	14,275,649	465,000	4
Granite	27.50	3,263,513	40,831	7
Jefferson	20.25	5,934,079	65,000	6
Lewis & Clark	16.75	20,931,129	506,550	2
Lincoln	24.75	5,282,943	20,204	6
Madison	20.75	6,431,426	155,360	6
Meagher	19.00	8,376,464	48,800	5
Missoula	19.50	17,451,264	628,000	3
Musselshell	21.50	8,184,520	85,000	5
Park	25.25	9,015,237	212,350	5
Powell	25.00	6,067,248	112,620	6
Ravalli	24.75	6,094,112	108,035	6
Rosebud	20.75	10,990,110	261,947	5
Sanders	27.75	4,817,196	168,600	7
Silver Bow	20.75	36,813,970	783,800	1
Sweet Grass	21.25	5,759,818	130,246	6
Teton	19.75	9,800,136	120,125	5
Valley	22.00	9,849,933	230,500	5
Yellowstone	21.25	17,876,666	371,700	3
Totals		$330,825,170	$7,129,317	

RATE OF TAXATION AND COUNTY EXPENSES FOR THE FISCAL YEAR 1912.

COUNTY.	Rate of County Taxation in Mills Except Specials.	District Court.	Justices' and Coroners' Court.	Salaries, Except Court Officers.	All Other Expenses.	Total.
Beaverhead	16.50	$27,645.75	$3,848.40	$13 440.93	$73,087.73	1118,022.81
Blaine	16.50	10,561.72	1,096.75	9,294.77	26,924.90	47,878.14
Broadwater	16.00	15,250.57	271.75	10,395.10	23,430.79	49,348.21
Carbon	22.00	22,727.55	3,130.65	17,546.17	64,806.89	108,211.26
Cascade	12.75	47,537.64	4,053.50	44,456.86	125,649.36	221,697.36
Chouteau	13.50	27,707.85	3,275.17	29,902.29	81,188.44	142,073.75
Custer	13.50	48,058.78	5,410.50	12,106.79	168,116.88	263,692.95
Dawson	17.00	32,302.40	2,755.50	22,808.71	81,226.14	139,092.75
Deer Lodge	12.75	21,084.41	819.65	21,020.55	63,239.00	106,163.61
Fergus	17.00	38,518.99	3,018.99	40,844.64	155,787.25	238,169.87
Flathead	20.00	29,568.32	2,587.75	35,134.02	141,143.89	208,433.98
Gallatin	16.00	31,995.89	1,166.00	25,071.07	87,789.59	146,025.55
Granite	20.25	10,696.10	577.65	11,458.23	32,528.76	55,260.74
Hill	13.50	17,269.27	1,091.05	15,372.34	40,268.11	74,000.77
Jefferson	14.50	16,520.86	1,313.90	12,918.10	40,813.08	71,565.94
Lewis & Clark	12.50	56,250.39	2,069.80	38,441.84	94,133.05	190,895.08
Lincoln	18.00	11,750.67	861.15	16,345.71	178,047.57	207,005.10
Madison	13.00	15,274.40	865.77	12,389.90	45,909.17	74,439.24
Meagher	13.80	13,199.11	451.20	16,334.31	45,642.91	75,627.56
Missoula	16.00	49,101.25	4,233.40	12,472.73	107,182.27	202,989.65
Musselshell	11.75	18,263.25	1,682.55	28,488.21	131,213.20	179,647.21
Park	17.00	26,266.53	833.15	16,304.55	53,688.73	97,092.96
Powell	16.00	15,831.70	1,426.90	12,154.48	51,838.97	81,252.05
Ravalli	18.00	19,151.64	943.50	15,738.41	59,036.52	94,870.07
Rosebud	12.50	21,346.19	1,789.30	17,766.05	173,530.32	214,131.86
Sanders	20.00	13,305.03	1,753.85	11,157.85	81,432.59	107,649.32
Silver Bow	14.00	134,586.11	11,843.35	82,150 50	376,782.99	605,362.95
Sweet Grass	17.00	17,842.94	572.40	11,088.22	30,956.94	60,460.50
Teton	10.75	24,073.51	1,876.43	27,250.05	66,389.05	119,569.04
Valley	15.25	42,428.74	5,367.57	29,537.78	96,806.19	174,140.28
Yellowstone	12.00	47,493.67	1,643.00	41,080.88	150,400.23	240,617.78
Totals		$923,611.23	$72,630.53	$770,455.04	$2,948,991.54	$4,715,688.34

ASSESSED VALUATION.

Total Assessed Valuation of Horses for the Year 1912.

COUNTY.	Thoroughbred.		Range.		Common Work and Mules.		Total Value.
	No.	Value.	No.	Value.	No.	Value.	
Beaverhead	102	$23,370	7,260	$261,785	3,862	$209,355	$494,510
Blaine	62	21,220	3,886	136,095	3,197	178,175	335,490
Broadwater	15	10,430	2,836	86,555	2,172	113,055	210,040
Carbon	...	.....	4,075	131,715	4,296	232,515	364,230
Cascade	111	28,630	3,898	143,386	6,264	344,080	516,096
Chouteau	56	14,355	2,886	101,110	4,163	257,260	372,725
Custer	216	36,995	23,563	810,038	8,268	444,260	1,291,293
Dawson	130	21,995	15,472	598,202	9,205	594,067	1,214,264
Deer Lodge	43	3,925	856	27,020	1,153	54,140	85,085
Flathead	32	7,090	2,626	92,935	3,146	157,375	257,400
Fergus	65	18,620	7,056	246,955	9,610	474,505	740,080
Gallatin	46	16,300	4,073	147,570	7,060	386,995	550,865
Granite	57	9,650	2,263	67,850	1,194	62,055	139,555
Hill	42	10,750	3,093	112,450	4,623	280,910	404,110
Jefferson	15	4,550	1,715	59,805	1,241	89,165	153,520
Lewis & Clark	67	16,725	2,659	93,285	3,068	160,645	270,655
Lincoln	10	2,450	673	22,445	174	24,990	49,885
Madison	68	27,275	5,088	137,475	4,309	225,295	390,045
Meagher	21	6,350	3,256	97,685	2,720	137,595	241,630
Missoula	42	6,075	2,713	94,166	3,267	170,000	270,241
Musselshell	40	10,125	3,205	115,151	4,959	189,457	314,733
Park	56	13,300	3,266	120,300	3,222	239,385	372,985
Powell	50	10,290	2,687	94,045	1,694	84,700	189,035
Ravalli	35	5,750	2,867	89,007	2,712	144,970	239,727
Rosebud	51	16,000	8,098	280,505	4,398	307,940	604,445
Sanders	12	3,950	800	27,940	1,168	58,400	90,290
Silver Bow	31	3,295	1,125	39,475	2,081	116,665	159,435
Sweet Grass	40	13,200	2,363	82,705	2,551	153,060	248,965
Teton	26	13,000	6,071	242,840	5,506	394,320	650,160
Valley	131	45,850	10,720	375,200	10,512	567,648	988,698
Yellowstone	33	8,550	2,850	101,380	6,045	367,095	477,025
State	1,735	$430,065	143,999	$5,037,075	128,138	$7,220,077	$12,687,217

ASSESSED VALUATION.

Total Assessed Valuation of Cattle for the Year 1912.

COUNTY.	Beef.		Yearlings.		Two-Year-Olds.		Three-Year-Olds.	
	No.	Value.	No.	Value.	No.	Value.	No.	Value.
Beaverhead	15,788	$583,236	4,963	$59,767	1,938	$93,048	.....	.....
Blaine	.....	.....	222	2,690	136	2,303	.....	.....
Broadwater	142	4,855	2,291	27,607	986	15,905	92	$2,760
Carbon	.....	.....	1,427	17,124	967	16,439	143	4,340
Cascade	833	33,220	.....	.....	.....	.....	.....	.....
Chouteau	.....	.....	.....	.....	.....	.....	.....	.....
Custer	.....	.....	1,890	23,065	1,499	25,851	967	29,390
Dawson	511	15,430	2,412	30,107	1,692	28,774	.....	.....
Deer Lodge	.....	.....	449	4,490	198	3,041	111	3,830
Fergus	.....	.....	1,091	13,101	1,034	17,585	114	3,420
Flathead	.....	.....	772	8,060	489	7,780	68	1,975
Gallatin	540	16,200	4,302	51,624	2,341	39,797	.....	.....
Granite	511	20,710	2,178	26,136	1,846	31,382	505	15,150
Hill	.....	.....	.....	.....	.....	.....	.....	.....
Jefferson	11	330	2,684	32,621	1,958	35,970	225	8,810
Lewis & Clark	.....	.....	763	10,290	439	7,520	377	11,805
Lincoln	.....	.....	284	2,845	223	3,445	30	650
Madison	1,060	34,395	3,742	37,525	.....	.....	.....	.....
Meagher	180	7,200	2,627	31,554	348	5,570	.....	.....
Missoula	69	3,205	1,501	16,567	1,184	19,999	138	4,461
Musselshell	.....	.....	263	3,285	166	2,954	6	207
Park	456	17,930	2,968	35,840	160	2,745	.....	.....
Powell	897	36,650	2,228	26,736	473	8,041	.....	.....
Ravalli	.....	.....	1,749	17,585	1,250	18,895	299	12,130
Rosebud	.....	.....	1,127	17,891	2,392	47,426	7,828	233,741
Sanders	.....	.....	335	3,355	216	3,243	39	1,170
Silver Bow	24	1,030	437	5,355	93	1,895	78	2,300
Sweet Grass	200	8,600	3,239	38,868	2,594	44,097	1,693	50,790
Teton	50	2,500	822	9,864	362	6,154	127	5,080
Valley	859	38,655	1,457	17,490	672	11,438	.....	.....
Yellowstone	.....	.....	1,711	20,532	856	14,576	2,138	71,430
State	22,130	$823,216	49,934	$591,974	29,512	$515,873	14,978	$463,439

ASSESSED VALUATION.

Total Assessed Valuation of Cattle for the Year 1912.—(Continued.)

COUNTY.	Cows.		Stock Cattle.		Other Stock.		Total Value.
	No.	Value.	No.	Value.	No.	Value.	
Beaverhead	975	$28,325	29,218	$585,334	...	.....	$1,349,710
Blaine	998	24,775	5,893	117,769	33*	$1,555	149,092
Broadwater	846	24,095	5,529	110,322	...	.....	185,544
Carbon	1,800	45,050	9,039	180,780	...	.....	263,733
Cascade	3,310	86,895	27,175	541,572	166**	8,255	669,912
Chouteau	709	19,320	11,782	235,640	32*	1,728	256,688
Custer	2,541	63,540	51,260	1,026,755	138**	5,660	1,174,261
Dawson	2,655	73,269	17,658	346,981	...	.....	494,561
Deer Lodge	992	29,130	1,104	20,466	...	.....	60,957
Fergus	2,142	61,250	19,055	489,115	14**	720	588,191
Flathead	2,388	60,335	3,272	63,910	27***	2,210	142,090
Gallatin	3,044	76,100	8,165	161,979	167**	8,160	353,860
Granite	817	20,425	4,949	98,898	...	.....	212,701
Hill	1,683	40,730	8,807	160,825	21**	820	202,375
Jefferson	1,369	46,123	3,345	91,356	5**	390	215,600
Lewis & Clark	1,700	44,885	15,915	319,235	...	.....	393,735
Lincoln	349	10,510	575	9,875	...	.....	27,325
Madison	1,400	35,410	19,584	353,395	...	.....	460,725
Meagher	.....	17,300	13,077	235,399	108**	4,320	301,343
Missoula	2,123	62,665	3,150	62,881	...	.....	169,778
Musselshell	1,024	28,901	8,504	170,595	12**	725	206,667
Park	1,817	54,655	7,367	147,385	...	.....	258,555
Powell	1,084	27,100	8,482	169,640	...	.....	268,167
Ravalli	2,400	61,430	1,628	28,217	...	.....	138,257
Rosebud	767	20,220	69,714	1,394,280	...	.....	1,713,558
Sanders	593	17,705	3,046	55,610	3*	120	81,203
Silver Bow	1,573	50,055	1,747	35,340	..	.....	95,975
Sweet Grass	1,445	43,350	9,656	193,130	...	.....	378,235
Teton	1,855	55,650	8,640	172,800	48*	2,800	254,848
Valley	.....	.....	19,145	382,890	...	.....	450,473
Yellowstone	3,345	87,570	17,540	350,800	19*	595	545,503
State	48,436	$1,319,768	414,021	$8,313,204	787	$44,083	$12,063,652

*Bulls. **Thoroughbreds. ***7 Elk and 20 Buffaloes.

ASSESSED VALUATION.

Total Assessed Valuation of Sheep for the Year. 1912.

COUNTY.	Sheep.		Lambs.		Rams.		Total Value.
	Number.	Value.	Number.	Value.	Number.	Value.	
Beaverhead	157,726	$ 318,599	.....	$.....	2,490	$ 12,565	$ 331,164
Blaine	247,918	642,006	36,600	78,700	2,368	12,890	733,596
Broadwater	47,049	94,100	.....	.....	401	2,005	96,105
Carbon	118,345	236,690	.....	.....	531	2,655	239,345
Cascade	134,294	274,288	.....	.....	786	3,430	277,718
Chouteau	200,719	401,438	.....	.....	1,617	9,325	410,763
Custer	262,731	528,662	.....	.....	1,846	9,230	537,892
Dawson	276,281	527,004	20,780	30,575	1,181	6,795	564,374
Deer Lodge	4,566	9,440	815	1,380	....	.....	10,820
Fergus	295,052	590,104	.....	.....	2,165	10,825	600,929
Flathead	2,673	6,585	.....	.....	....	.....	6,585
Gallatin	22,750	45,500	.....	.....	91	455	45,955
Granite	16,693	33,386	.....	.....	147	735	34,121
Hill	156,056	321,112	.....	.....	925	1,850	313,962
Jefferson	9,172	27,740	802	1,630	100	500	29,870
Lewis and Clark	161,091	323,660	.....	.....	....	.....	323,660
Lincoln	.....	.....	.....	.....	....	.....	.....
Madison	123,761	247,925	.....	.....	3,006	15,030	262,955
Meagher	263,145	526,290	.....	.....	2,729	13,645	539,935
Missoula	3,294	9,620	.....	.....	.....	.....	9,620
Musselshell	138,836	291,859	.....	.....	1,042	5,240	297,099
Park	83,640	189,255	450	900	643	3,225	193,380
Powell	96,928	193,856	.....	.....	893	4,465	198,321
Ravalli	17,110	44,209	.....	.....	363	1,315	45,524
Rosebud	320,336	640,672	3,800	7,600	1,638	8,015	656,287
Sanders	26	55	.....	.....	....	.....	55
Silver Bow	11,040	22,100	.....	.....	....	.....	22,100
Sweet Grass	255,499	510,998	18,175	36,350	2,690	13,455	560,803
Teton	264,436	492,872	.....	.....	1,674	8,370	501,242
Valley	181,715	363,430	20,377	30,566	1,181	5,905	399,901
Yellowstone	291,395	709,812	.....	.....	815	4,275	714,087
STATE	4,146,278	$8,614,267	101,799	$187,701	31,252	$156,200	$8,958,168

ASSESSED VALUATION.

Total Assessed Valuations of Hogs and Goats for the Year 1912.

COUNTY.	Hogs.		Goats.	
	Number.	Value.	Number.	Value.
Beaverhead	1,041	$ 5,285	.....	$.....
Blaine	396	1,953	.....	.....
Broadwater	891	4,455	3	15
Carbon	1,753	8,765	.....	.....
Cascade	1,703	8,535	19	40
Chouteau	427	2,471	.....	.....
Custer	1,527	9,233	.....	.....
Dawson	1,276	6,888	.....	.....
Deer Lodge	410	2,863	.....	.....
Fergus	2,708	13,540	45	189
Flathead	1,348	7,855	.....	.....
Gallatin	2,522	17,415	.....	.....
Granite	371	1,855	216	432
Hill	281	1,425	.....	.....
Jefferson	349	1,717	182	910
Lewis and Clark	614	3,085	.....	.....
Lincoln	217	1,095	8	50
Madison	1,225	12,285	40	80
Meagher	802	4,010	.....	.....
Missoula	1,894	10,405	.....	.....
Musselshell	1,353	7,056	.....	.....
Park	2,046	13,355	.....	.....
Powell	422	2,110	.....	.....
Ravalli	2,217	7,511	.....	.....
Rosebud	550	3,042	.....	.....
Sanders	273	1,428	.....	.....
Silver Bow	532	3,510	.....	.....
Sweet Grass	523	2,615	800	2,000
Teton	1,016	5,080	.....	.....
Valley	1,168	5,840	.....	.....
Yellowstone	1,725	8,624	.....	.....
STATE	33,580	$185,306	1,313	$3,716

TOTAL MILEAGE AND ASSESSED VALUATION OF RAILROADS IN THE STATE FOR THE YEAR 1912.

RAILROAD.	Mileage Main Line.	Value Per Mile.	Value.	Side Tracks.	Value Per Mile.	Value Side Tracks.	Value Main Line and Side Tracks.	By Systems.
Chicago, Burlington & Quincy Railroad—								
Wyoming State Line to Huntley Branch....	101.74	$12,500	$1,271,750	27.29	$1,250	$ 34,113	$1,305,863	
Frannie-Fromberg Branch	32.63	12,500	407,875	8.25	1,250	10,313	418,188	
	134.37	.....	$1,679,625	35.54	.....	$ 44,426	$1,724,051	$1,724,051
Butte, Anaconda & Pacific—								
Main Line	25.30	19,925	504,103	52.55	1,992	104,680	608,783	
Spurs	19.68	14,000	275,520	19.03	1,400	26,642	302,162	
Stuart Branch	8.94	2,500	22,350	4.60	250	1,150	23,500	
	53.92	.....	$ 801,973	76.18	.....	$132,472	$934,445	$934,445
Chicago, Milwaukee & Puget Sound—								
Main Line	734.79	14,000	10,287,060	179.22	1,400	250,908	10,537,968	
Harlowton to Lewistown Branch	62.42	10,000	624,200	6.96	1,000	6,960	631,160	
Ringling Branch	3.63	5,000	18,150	2.00	500	1,000	19,150	
Lewistown to Hilger	17.77	5,000	88,850	1.77	500	885	89,735	
	818.61	.....	$11,018,260	189.95	.....	$250,753	$11,278,013	$11,278,013
Great Northern—								
Main Line	677.12	19,925	13,491,616	157.63	1,992	313,993	13,805,615	
Billings Branch	194.06	16,500	3,201,990	35.28	1,650	58,212	3,260,202	
Bainville Branch	53.19	7,500	398,925	4.44	750	3,330	402,255	
Barker Branch	10.79	125	1,349	.....	.....	.....	1,349	
Fair Ground Spur	0.68	500	340	0.14	50	7	347	
Fernie Branch	8.86	7,500	66,450	1.99	750	1,493	67,943	
Havre to Butte	289.51	19,925	5,768,487	85.96	1,992	171,232	5,939,719	
Kalispell Branch	15.63	15,000	234,450	8.35	1,500	12,525	246,975	
Marion Spur	25.36	3,000	76,080	2.16	300	648	76,728	
Mountain View Spur	3.32	8,000	26,560	0.71	800	568	27,128	
Neihart Branch	38.34	5,000	191,700	3.81	500	1,905	193,605	
Sand Coulee Branch	10.82	10,000	108,200	5.10	1,000	5,100	113,300	
Shelby to Armington	127.09	16,000	2,033,440	29.72	1,600	47,552	2,080,992	
Somer's Spur	10.45	5,000	52,250	2.97	500	1,485	53,735	
Sweet Grass Branch	36.31	5,000	181,550	1.42	500	710	182,260	
Red Mountain Spur	1.47	1,000	1,470	.....	.....	.....	1,470	
Double Track	14.38	23,925	344,042	.....	.....	.....	344,042	
	1,517.38	.....	$26,178,899	339.68	.....	$618,766	$26,797,665	$26,797,665

TOTAL MILEAGE AND ASSESSED VALUATION OF RAILROADS IN THE STATE FOR THE YEAR 1912.—(Continued).

RAILROAD.	Mileage Main Line.	Value Per Mile.	Value.	Side Tracks	Value Per Mile.	Value Side Tracks.	Value Main Line and Side Tracks.	By Systems.
Northern Pacific—								
Main Line	632.61	19,925	12,604,754	372.14	1,992	741,303	13,246,057	
Bitter Root Branch	47.37	15,000	710,550	9.81	1,500	14,715	725,265	
Bitter Root Branch Extension	18.10	3,000	54,300	4.69	300	1,407	55,707	
Boulder Branch	7.91	2,500	19,775	1.63	250	408	20,183	
Butte Line	70.75	19,925	1,409,694	33.56	1,992	66,852	1,476,546	
Camp Creek Branch	15.15	7,500	113,625	1.52	750	1,140	114,765	
Clark's Fork Branch	19.71	15,000	295,650	11.19	1,500	16,785	312,435	
Coeur d'Alene Branch	109.57	12,000	1,314,840	20.27	1,200	24,324	1,339,164	
Elkhorn Branch	20.13	3,000	60,390	2.11	300	633	61,023	
Gaylord & Ruby Valley Branch	45.72	11,000	502,920	4.00	1,100	4,400	507,320	
Marysville Branch	12.58	6,000	75,480	1.46	600	876	76,356	
Montana Union	56.89	19,925	1,013,983	23.79	1,992	47,390	1,061,373	
Butte Hill Spur	6.66	6,000	39,960	8.47	600	5,082	45,042	
Park Branch	54.26	10,000	542,600	8.31	1,000	8,310	550,910	
Philipsburg Branch	25.94	5,200	134,888	4.22	520	2,194	137,082	
Pony Branch	6.65	6,000	39,900	0.40	600	240	40,140	
Red Bluff Branch	20.99	5,000	104,950	2.57	500	1,285	106,235	
Red Mountain Branch	16.51	1,500	24,765	4.33	150	650	25,415	
Rocky Fork Branch	44.14	15,750	695,205	15.88	1,575	25,011	720,216	
Shield's River Branch	22.90	10,000	229,000	2.52	1,000	2,520	231,520	
St. Regis Cut-Off	21.85	12,000	262,200	13.62	1,200	16,344	278,544	
Double Track	146.20	23,925	3,497,835	.....	.....	.....	3,497,835	
	1,270.39	.....	.....	546.49	.....	$981,869	$24,729,133	$24,729,133
Oregon Short Line—								
Main Line	125.89	22,500	2,832,525	29.47	2,250	66,307	2,898,832	
Yellowstone Branch	9.53	10,000	95,300	1.67	1,000	1,670	96,970	
	135.42	.....	$2,927,825	31.14	.....	$67,977	.....	$2,995,802
Yellowstone Park Railway—								
Main Line	11.00	2,000	22,000	0.95	200	190	22,190	$22,190

Valuation fixed by State Board of Equalization, $68,481,299.

TOTAL ASSESSED VALUATION OF ALL PROPERTY IN THE STATE FOR THE YEAR 1912.

COUNTY.	Valuation Fixed by the Assessors of the Various Counties and Equalized by the Boards of County Commissioners.							Valuation Fixed by State Board of Equalization.	Total Value of County.
	Acres of Land.	Value per Acre.	Value.	All Other Real Estate.	Live Stock.	All Other Personal Property.	Total, Real and Personal Property.	Railroad Valuation.	
Beaverhead	452,623	$3.69	$1,668,769	$1,974,591	$2,180,669	$ 1,027,951	$ 6,851,980	$ 2,022,297	$ 8,854,277
Blaine	224,387	3.75	841,783	970,726	1,220,131	590,091	3,622,731	1,491,081	5,113,812
Broadwater	276,923	3.37	935,440	525,150	496,159	415,648	2,372,397	1,198,463	3,490,860
Carbon	291,518	7.98	2,328,580	1,591,846	876,073	1,256,374	6,052,873	1,430,426	7,483,299
Cascade	1,145,385	5.21	5,970,193	9,282,872	1,472,331	5,101,814	21,827,210	2,997,156	24,824,366
Chouteau	336,179	3.40	1,144,872	787,008	1,042,647	820,689	3,795,216	1 560,241	5,355,557
Custer	2,085,086	3.21	6,698,134	3,154,764	3,012,679	1,850,020	14,715,597	3,396,898	18,112,495
Dawson	1,802,719	2.21	3,974,618	1,775,239	2,280,087	1,220,567	9,250,511	1,305,073	10,555,584
Deer Lodge	150,844	2.84	428,831	5,218,772	159,725	2,132,120	7,939,748	921,626	8,861,374
Flathead	773,751	5.09	3,939,418	2,244,650	416,140	1,723,946	8,324,154	2,434,099	10,758,253
Fergus	1,310,660	5.13	6,721,290	3,072,380	1,942,929	2,223,141	13,959,740	1,534,508	15,494,248
Gallatin	718,861	7.73	5,552,670	4,090,200	968,095	1,618,620	12,229,585	2,536,272	14,765,857
Granite	235,767	2.72	640,985	644,414	388,664	374,191	2,048,254	1,235,993	3,284,247
Hill	240,792	3.44	826,288	1,601,239	921,872	1,061,047	4,410,446	2,560,766	6,971,212
Jefferson	118,809	6.81	809,693	1,029,309	401,617	861,352	3,101,971	2,630,133	5,732,104
Lewis and Clark	627,792	3.40	2,149,240	10,589,515	991,135	4,832,928	18,553,818	1,930,284	20,484,202
Lincoln	511,018	4.32	2,205,125	362,345	78,355	347,805	2,993,630	2,500,613	5,494,243
Madison	527,203	2.78	1,462,236	1,840,205	1,126,690	1,189,275	5,617,806	773,514	6,391,320
Meagher	960,876	3.78	3,631,294	1,229,580	1,086,918	846,583	6,794,375	2,055,246	8,849,621
Missoula	852,781	3.64	3,107,580	5,992,641	460,044	3,132,182	12,692,447	5,177,312	17,869,759
Musselshell	919,096	4.01	3,686,394	1,187,606	825,555	752,504	6,452,059	1,858,789	8,310,848
Park	619,559	4.07	2,524,979	2,909,315	838,275	1,437,785	7,710,354	1,526,036	9,236,390
Powell	609,670	3.09	1,844,148	1,148,081	657,633	595,119	4,244,981	1,880,230	6,125,211
Ravalli	375,828	6.39	2,387,651	1,925,653	431,019	1,036,949	5,781,272	509,157	6,290,429
Rosebud	1,354,422	2.85	3,851,498	935,382	2,977,332	691,788	8,456,000	3,474,237	11,930,237
Sanders	392,673	2.98	1,171,815	615,171	172,976	459,284	2,419,246	2,642,227	5,061,473
Sweet Grass	688,354	3.34	2,298,890	715,919	1,192,618	672,213	4,879,640	1,065,702	5,945,342
Silver Bow	107,488	3.81	410,445	19,361,255	281,020	20,103,680	40,156,400	2,479,582	42,635,982
Teton	575,254	5.30	3,040,747	1,766,280	1,411,330	1,299,986	7,518,343	3,365,092	10,883,435
Valley	243,667	3.17	771,301	1,871,695	1,844,912	1,571,564	6,059,472	4,536,354	10,595,826
Yellowstone	852,214	7.24	6,167,850	6,295,337	1,745,239	3,028,604	17,237,030	3,551,692	20,788,722
Total	20,382,209	....	$83,183,757	$96,709,140	$33,900,269	$61,276,120	$278,069,286	$68,481,299	$346,550,585

STATEMENT OF RESOURCES AND LIABILITIES OF MONTANA STATE, PRIVATE AND NATIONAL BANKS ON NOVEMBER 26, 1912

(Compiled by Fred E. Hoss, State Examiner.)

RESOURCES.

	State.	Private.	National.	Total.
Loans and Discounts	$27,148,309.52	$4,408,311.25	$29,014,931.92	$60,571,552.69
Overdrafts	911,338.36	554,129.88	268,728.03	1,734,196.27
Bonds and Warrants	2,403,362.55	242,515.49	6,665,437.44	9,411,315.48
Real Estate, Furniture, Fixtures	1,755,807.11	1,417,324.49	1,405,628.50	4,578,760.10
Gold, Silver and Currency	3,060,857.26	654,492.38	3,795,565.56	7,510,915.20
Due from Banks	10,472,934.62	1,845,489.92	12,693,088.03	25,011,512.57
Checks, Cash Items	295,427.09	51,456.71	245,046.45	591,930.25
Other Resources	129,426.82	11,662.87	154,640.80	295,730.48
Total Resources	$46,177,463.33	$9,285,382.99	$54,243,066.73	$109,705,913.05

LIABILITIES.

Capital Stock	$6,465,000.00	$1,072,000.00	$5,085,000.00	$12,622,000.00
Surplus	1,354,691.25	26,941.59	2,726,750.00	4,108,382.84
Undivided Profits	1,431,789.10	212,314.37	1,870,769.40	3,514,872.87
Due to Banks	2,941,305.38	273,653.48	41,407,008.90	3,214,958.86
Deposits, Checking	24,568,554.59	6,022,751.96	.....	82,597,868.05
Deposits, Savings	9,035,324.83	1,564,227.77	.....	.....
Bills Payable	375,424.02	112,188.05	52,033.48	539,645.55
Other Liabilities	5,374.16	1,305.77	4,617 45	11,297.38
Circulation	.....	.....	3,096,887.50	3,096,887.50
Total Liabilities	$46,177,463.33	$9,285,382.99	$54,243,066.73	$109,705,913.05

OFFICIAL VOTE OF THE STATE OF MONTANA.

Cast at the Regular Election Held on the 5th Day of November, A. D. 1912, as Canvassed by the State Board of Canvassers.

	Presidential Electors.																			
	J. C. McCarthy (Dem.).	John MacGinniss (Dem.).	Andrew S. Lohman (Dem.).	Geo. M. Houtz (Dem.).	T. A. Cummings (Rep.).	C. E. Trescott (Rep.).	A. W. Miles (Rep.).	T. C. Davidson (Rep.).	Conrad Kohrs (Prog.).	J. T. Stanford (Prog.).	A. W. Merrifield (Prog.).	Sam Gordon (Prog.).	O. J. Sholl (Soc.).	Harry P. Nevills (Soc.).	L. J. Whitaker (Soc.).	Adam F. Skirving (Soc.).	J. F. Chessman (Pro.).	G. N. Inabit (Pro.).	J. M. Peats (Pro.).	R. R. Crowe (Pro.).
Beaverhead	713	694	695	694	708	689	695	687	320	315	315	316	110	106	108	102	1	1	1	1
Blaine	318	307	352	303	204	187	185	189	507	484	491	481	108	103	100	98	.....	.....	.....	.....
Broadwater	451	440	435	424	205	186	185	189	197	185	185	183	80	73	70	71	.....	.....	.....	.....
Carbon	796	751	739	737	646	600	613	596	766	727	712	725	388	363	362	356	.....	.....	.....	.....
Cascade	1,633	1,587	1,579	1,575	1,079	1,003	995	987	999	1,001	970	977	838	817	799	800	.....	.....	.....	.....
Chouteau	402	391	391	392	561	530	535	526	259	254	265	249	129	127	128	125	3	3	3	3
Custer	1,068	1,041	1,031	1,034	695	632	644	629	1,192	1,166	1,164	1,185	247	230	234	225	1	1	1	1
Dawson	719	668	671	662	678	613	614	622	1,165	1,115	1,112	1,131	220	203	200	200	.....	.....	.....	.....
Deer Lodge	1,197	1,187	1,182	1,170	1,060	996	997	986	464	452	441	442	139	137	135	134	.....	.....	.....	.....
Fergus	1,393	1,355	1,349	1,336	745	684	687	683	1,104	1,083	1,069	1,077	421	407	402	401	.....	.....	.....	.....
Flathead	1,106	1,161	1,154	1,164	493	484	488	473	1,256	1,333	1,351	1,325	446	434	434	432	.....	.....	.....	.....
Gallatin	1,407	1,346	1,352	1,325	683	656	664	654	929	907	892	896	212	197	196	196	9	9	10	9
Granite	346	340	341	331	195	183	179	178	256	251	253	250	92	90	89	88	.....	.....	.....	.....
Hill	624	591	594	579	536	488	492	483	545	527	524	519	323	297	302	292	.....	.....	.....	.....
Jefferson	479	470	468	457	239	247	227	231	299	272	270	275	176	174	171	163	.....	.....	.....	.....
Lewis and Clark	1,505	1,499	1,479	1,460	1,062	1,018	1,035	1,025	1,375	1,335	1,315	1,325	391	387	388	381	2	2	2	2
Lincoln	346	348	333	325	218	201	210	203	206	192	188	191	235	225	223	223	.....	.....	.....	.....
Madison	822	809	802	792	506	491	497	485	457	442	437	576	78	74	75	74	.....	.....	.....	.....
Meagher	473	452	447	447	321	300	299	298	327	308	308	304	75	70	70	70	3	3	3	3
Missoula	1,523	1,471	1,456	1,454	589	560	564	553	1,773	1,731	1,726	1,736	773	744	754	737	.....	.....	.....	.....
Musselshell	470	450	440	436	483	451	445	447	400	386	384	389	215	209	206	208	.....	.....	.....	.....
Park	666	683	759	755	609	605	664	599	687	718	710	713	245	253	249	249	.....	.....	.....	.....
Powell	545	514	504	498	335	329	326	324	418	379	370	375	147	138	124	123	.....	.....	.....	.....
Ravalli	858	837	837	835	316	310	309	308	896	873	860	865	282	271	270	271	8	8	8	8
Rosebud	313	305	310	303	392	369	367	361	368	358	361	360	80	75	70	70	3	3	3	3
Sanders	414	408	402	407	257	239	236	235	375	362	359	362	161	153	153	151	.....	.....	.....	.....
Silver Bow	4,542	4,523	4,523	4,460	2,232	2,215	2,181	2,162	1,802	1,770	1,709	1,748	3,320	3,320	3,306	3,238	.....	.....	.....	.....
Sweet Grass	277	278	275	276	181	173	176	173	424	422	418	423	60	58	57	57	.....	.....	.....	.....
Teton	646	614	609	604	612	589	581	582	446	440	429	427	287	265	265	261	.....	.....	.....	.....
Valley	696	644	641	628	668	576	562	584	858	819	800	813	362	342	349	334	1	1	1	1
Yellowstone	1,193	1,142	1,137	1,122	1,004	972	963	951	1,386	1,311	1,274	1,299	245	223	223	229	.....	.....	.....	.....
Total	27,941	27,306	27,290	26,985	18,512	17,567	17,615	17,403	22,456	21,918	21,662	21,937	10,885	10,565	10,512	10,359	31	31	32	31

OFFICIAL VOTE OF THE STATE OF MONTANA.—(Continued.)

Cast at the Regular Election Held on the 5th Day of November, A. D. 1912, as Canvassed by the State Board of Canvassers.

	United States Senator.			Representative in Congress.								Governor.				Lieutenant Governor.			
	Thomas J. Walsh (Dem.).	Henry C. Smith (Rep.).	Joseph M. Dixon (Prog.).	Thomas Stout (Dem.).	John M. Evans (Dem.).	Charles N. Pray (Rep.).	William R. Allen (Rep.).	Thomas M. Everett (Prog.).	George A. Hókran (Prog.).	Henri La Beau (Soc.).	J. Frank Mabie (Soc.).	Sam V. Stewart (Dem.).	Harry L. Wilson (Rep.).	Frank J. Edwards (Prog.).	Lewis J. Duncan (Soc.).	W. W. McDowell (Dem.).	J. C. Kinney (Rep.).	W. D. Symmes (Prog.).	F. L. Buzzell (Soc.).
Beaverhead	711	728	307	658	592	791	673	220	203	97	97	755	756	214	136	704	751	212	119
Blaine	314	208	514	253	243	304	176	510	386	88	78	264	258	490	121	279	237	478	105
Broadwater	505	213	169	437	405	268	237	120	110	69	68	357	222	203	132	392	234	157	94
Carbon	865	700	700	692	678	923	806	446	433	356	345	622	1,072	394	397	725	855	432	357
Cascade	1,875	1,124	996	1,489	1,394	1,572	1,245	629	544	771	771	1,390	1,092	722	1,367	1,453	1,126	697	1,082
Chouteau	408	524	298	324	314	772	530	210	172	107	101	360	615	229	139	379	568	238	131
Custer	1,033	720	1,286	906	852	883	704	969	1,012	223	220	831	1,186	986	260	925	947	970	240
Dawson	688	602	1,263	581	554	825	610	916	819	192	169	568	932	1,050	218	581	953	951	199
Deer Lodge	1,345	873	466	1,142	1,011	1,028	1,299	287	220	108	102	1,336	1,008	360	158	1,261	1,041	326	137
Fergus	1,492	582	1,138	1,668	1,188	825	638	812	739	385	364	1,346	773	995	491	1,202	629	1,277	430
Flathead	1,278	528	1,394	1,037	994	646	550	1,122	1,107	348	393	1,038	674	1,343	470	1,075	577	1,251	459
Gallatin	1,422	671	952	1,327	1,221	891	701	706	571	165	147	1,309	926	736	245	1,277	890	700	203
Granite	....	.....	.....	298	268	236	189	194	194	76	69	319	210	275	120	319	195	240	103
Hill	608	520	565	431	398	826	470	428	330	300	280	516	706	423	368	547	610	419	345
Jefferson	495	288	262	452	409	311	270	179	153	155	158	481	284	236	191	457	281	203	177
Lewis and Clark	1,607	1,465	1,072	1,421	1,313	1,492	1,239	941	853	346	328	1,221	1,026	1,733	353	1,349	1,139	1,302	356
Lincoln	344	236	211	296	295	267	234	131	136	225	232	310	272	138	252	308	248	125	249
Madison	826	556	400	777	734	631	590	284	267	72	69	1,071	490	224	85	852	555	273	82
Meagher	499	297	308	474	391	436	355	205	201	60	53	423	410	265	88	389	382	278	75
Missoula	1,449	498	2,128	1,329	1,844	878	616	1,353	1,224	675	688	1,276	827	1,595	901	1,376	745	1,513	828
Musselshell	501	472	335	473	404	560	468	237	239	196	188	391	672	246	220	432	562	251	206
Park	824	565	704	743	693	734	634	515	459	232	225	768	791	562	268	761	708	537	267
Powell	536	376	351	471	453	425	402	257	219	127	109	499	439	323	153	504	418	293	145
Ravalli	849	287	951	790	773	398	336	814	795	241	243	716	395	845	358	735	358	836	301
Rosebud	292	371	372	244	209	412	302	272	371	56	50	245	528	289	76	249	436	273	62
Sanders	425	288	371	381	391	345	298	300	286	153	154	378	337	312	194	384	312	299	175
Silver Bow	4,489	2,411	1,201	4,373	4,311	2,604	2,557	1,011	993	3,595	3,581	1,504	2,380	1,070	3,975	4,268	2,478	1,014	3,730
Sweet Grass	273	153	412	266	254	255	234	332	323	63	60	241	308	312	73	255	260	302	67
Teton	663	610	431	562	489	783	630	302	253	258	216	568	784	292	317	568	739	284	311
Valley	613	641	1,080	483	441	898	573	825	653	327	311	541	762	904	428	534	715	869	383
Yellowstone	1,192	943	1,524	1,113	985	1,286	1,067	1,117	1,071	205	187	724	1,805	1,124	212	907	1,427	1,105	215
Total	28,421	18,450	22,161	25,891	24,492	23,505	19,633	16,644	15,336	10,271	10,056	25,381	22,950	18,881	12,566	25,447	21,376	18,105	11,633

OFFICIAL VOTE OF THE STATE OF MONTANA.—(Continued.)

Cast at the Regular Election Held on the 5th Day of November, A. D. 1912, as Canvassed by the State Board of Canvassers.

	Secretary of State.				Associate Justice.		Attorney General.				Treasurer.				State Auditor.			
	A. M. Alderson (Dem.).	Frank A. Hazelbaker (Rep.).	George Metcalf (Prog.).	A. J. Chapman (Soc.).	Sydney Sanner (Dem.).	L. L. Callawy (Rep.).	George W. Farr (Prog.).	Daniel M. Kelly (Dem.).	W. J. Paul (Rep.).	C. M. Sawyer (Prog.).	William C. Rae (Dem.).	W. M. Enright (Rep.).	H. J. Thompson (Prog.).	H. J. Hamilton (Soc.).	William Keating (Dem.).	Charles McCoy (Rep.).	Edward M. Crumrine (Prog.).	Albert J. Michaud (Soc.).
Beaverhead	512	1,079	158	94	541	1,034	152	679	823	215	673	779	231	99	666	801	196	99
Blaine	263	236	483	93	275	259	490	317	232	501	295	230	488	90	273	243	463	90
Broadwater	427	240	117	76	388	334	105	460	248	119	428	244	123	83	428	241	112	75
Carbon	742	809	457	364	777	885	463	797	850	491	1,438	546	234	283	708	880	423	345
Cascade	1,497	1,315	638	871	1,617	1,478	691	1,755	1,339	729	1,561	1,343	602	831	1,532	1,331	587	838
Chouteau	371	573	241	117	383	596	251	411	583	256	389	570	227	116	358	595	225	115
Custer	970	782	1,051	239	1,763	411	941	1,124	800	1,072	925	929	1,016	233	972	825	975	257
Dawson	687	772	985	209	1,185	552	868	708	742	1,098	624	822	994	210	651	812	944	208
Deer Lodge	1,171	1,011	372	104	1,109	1,255	321	1,226	1,069	428	1,034	1,276	314	115	1,211	1,086	288	118
Fergus	1,374	741	967	399	1,441	790	947	1,449	722	984	1,380	773	944	407	1,384	770	931	401
Flathead	1,061	580	1,275	470	1,148	733	1,212	1,170	641	1,308	1,109	593	1,260	423	1,083	631	1,198	414
Gallatin	1,282	911	672	184	1,271	1,050	625	1,373	860	702	1,311	912	647	179	1,294	932	634	175
Granite	245	198	373	80	.....	.....	.....	315	228	232	321	223	237	82	327	205	224	65
Hill	530	580	462	323	548	661	475	631	577	480	521	621	445	323	517	629	405	319
Jefferson	411	313	179	168	349	566	130	672	248	156	472	286	193	166	456	312	180	164
Lewis and Clark	1,416	1,316	1,010	334	1,479	1,473	1,011	1,591	1,246	1,156	1,451	1,326	1,018	336	1,340	1,552	852	331
Lincoln	200	255	135	247	335	254	169	348	258	168	306	246	138	237	300	256	130	230
Madison	715	717	258	71	497	1,111	185	826	611	261	799	614	285	70	667	819	234	67
Meagher	422	403	240	65	427	418	230	491	362	236	466	395	215	65	421	414	221	63
Missoula	1,340	774	1,525	799	1,451	930	1,486	1,528	787	1,567	1,303	870	1,471	792	1,937	613	1,154	714
Musselshell	442	552	249	211	478	573	272	483	572	270	481	537	245	206	445	557	236	206
Park	915	690	480	255	812	771	523	801	711	653	789	753	504	262	750	763	494	253
Powell	437	468	286	135	484	478	283	377	756	207	453	488	250	136	480	466	244	132
Ravalli	747	402	865	237	791	435	844	810	382	881	832	364	818	232	795	383	808	226
Rosebud	277	402	285	60	366	333	345	277	407	287	286	427	268	60	269	414	271	61
Sanders	373	349	296	160	409	350	366	415	332	313	399	337	301	150	410	333	284	143
Silver Bow	4,191	2,553	992	3,717	4,208	2,697	945	4,321	2,522	946	4,181	2,522	997	3,726	4,086	2,707	906	3,686
Sweet Grass	276	233	304	61	370	227	253	288	232	301	283	245	293	55	266	265	289	57
Teton	577	734	300	270	623	767	292	634	749	301	588	735	286	277	582	744	281	362
Valley	531	696	863	383	590	739	946	587	718	959	558	692	857	377	545	723	819	367
Yellowstone	1,093	1,177	1,158	208	1,177	1,202	1,163	1,124	1,207	1,190	1,054	1,138	1,065	190	1,055	1,249	1,087	206
Total	25,621	21,921	17,676	11,007	27,292	23,362	16,954	28,042	21,850	18,467	26,710	22,136	16,966	10,811	26,208	22,581	16,095	10,687

OFFICIAL VOTE OF THE STATE OF MONTANA.—(Continued.)

Cast at the Regular Election Held on the 5th Day of November, A. D. 1912, as Canvassed by the State Board of Canvassers.

	Railroad Commissioner.				Superintendent Public Instruction.				For Asylum Bond Issue.	Against Asylum Bond Issue.	For Repeal Militia Bill.	Against Repeal Militia Bill.	For Direct Primary.	Against Direct Primary.	For Corrupt Practice.	Against Corrupt Practice.	For Popular Election of Senator.	Against Popular Election of Senator.	For Popular Election of President.	Against Popular Election of President.
	J. H. Hall (Dem.).	Leo H. Faust (Rep.).	R. J. Moore (Prog.).	R. J. McDermand (Soc.).	Henry A. Davee (Dem.).	Lewis Terwilliger (Rep.).	Burt Adams Tower (Prog.).	Alma M. Kriger (Soc.).												
Beaverhead	679	739	243	99	663	730	295	101	973	350	532	724	1,026	195	989	192	1,053	194	1,054	239
Blaine	289	219	496	91	343	212	439	91	471	466	307	670	930	131	802	228	859	161	945	113
Broadwater	435	218	137	77	420	254	111	71	194	504	263	433	574	113	539	140	576	111	579	94
Carbon	755	801	459	362	765	816	412	353	876	1,202	767	1,270	1,776	308	1,682	386	1,697	335	1,805	317
Cascade	1,940	984	567	887	1,584	1,265	558	842	2,202	1,533	1,066	2,733	1,949	1,322	1,899	1,355	1,994	1,240	1,987	1,266
Chouteau	383	541	243	123	394	541	233	126	675	463	494	613	1,024	137	945	199	974	138	984	110
Custer	1,038	743	1,055	238	1,018	762	1,000	247	1,000	1,533	1,063	1,159	1,240	844	1,168	798	1,164	787	1,173	771
Dawson	678	736	983	222	668	789	944	219	1,159	1,062	908	1,184	2,064	248	1,975	300	2,018	276	2,038	246
Deer Lodge	1,247	980	345	127	1,275	1,005	295	115	2,470	408	834	1,816	2,112	423	2,113	370	2,166	344	2,086	353
Fergus	1,420	716	952	413	1,737	641	749	391	1,668	1,509	941	1,845	2,341	444	2,149	462	2,217	408	2,222	386
Flathead	1,082	713	1,183	422	1,154	617	1,181	434	1,285	1,930	1,084	1,859	2,545	389	2,471	415	2,511	365	2,506	336
Gallatin	1,327	776	759	176	1,392	886	573	176	1,480	1,280	980	1,650	1,441	971	1,429	955	1,485	952	1,459	926
Granite	312	207	248	79	331	210	216	85	460	386	187	620	693	116	601	189	688	118	704	110
Hill	563	561	451	323	537	580	440	331	712	921	550	1,075	1,388	255	1,255	276	1,279	248	1,335	236
Jefferson	486	260	186	171	442	327	168	179	544	485	332	687	826	171	823	177	840	149	848	142
Lewis and Clark	1,684	1,109	987	345	1,523	1,237	972	362	1,413	2,436	1,346	2,533	3,333	487	3,289	553	3,375	492	3,377	488
Lincoln	258	343	130	221	289	250	130	234	526	378	338	521	710	160	698	144	729	137	722	115
Madison	818	573	274	76	776	599	308	73	948	520	525	724	737	380	719	388	718	325	719	358
Meagher	422	343	293	69	472	369	215	67	519	564	300	676	531	281	500	271	517	257	479	277
Missoula	1,458	705	1,470	777	1,452	794	1,388	776	2,558	1,711	1,199	2,985	3,645	461	3,371	795	3,551	532	3,772	451
Musselshell	459	519	244	217	474	548	215	208	530	694	459	827	1,177	198	1,133	208	1,097	200	1,108	188
Park	807	688	515	250	568	1,145	349	244	805	1,136	673	951	1,614	355	1,660	406	1,675	367	1,680	361
Powell	476	432	290	143	505	430	243	135	864	494	378	890	1,034	233	884	185	1,087	209	1,083	197
Ravalli	788	358	818	240	825	355	793	230	883	851	545	1,163	1,442	222	1,433	250	1,456	249	1,481	235
Rosebud	283	389	287	61	272	413	267	62	521	409	376	367	552	255	511	279	526	265	535	257
Sanders	391	313	303	155	400	321	295	145	542	596	332	724	852	196	826	191	835	178	838	163
Silver Bow	4,318	2,474	898	3,682	4,273	2,479	913	3,728	4,116	2,582	1,105	6,794	3,057	2,036	2,776	1,909	2,850	1,849	8,292	1,897
Sweet Grass	285	242	299	58	256	281	284	57	333	547	334	459	757	102	722	128	749	102	764	94
Teton	643	677	298	264	591	712	288	277	988	645	680	884	964	447	922	475	952	448	958	420
Valley	563	633	927	384	544	677	842	376	1,006	997	826	1,089	1,163	569	1,144	559	1,130	551	1,146	593
Yellowstone	1,129	1,123	1,141	220	1,093	1,253	1,055	222	1,514	1,869	1,471	1,794	2,940	430	2,865	462	2,852	455	2,962	405
Total	27,406	20,115	17,481	10,972	27,036	21,498	16,171	10,957	34,235	30,461	21,195	41,749	46,437	12,879	44,337	13,645	45,620	12,442	46,421	12,143

OFFICIAL DIRECTORY.

UNITED STATES OFFICIALS.

Office.	Name.	Address.
Judge U. S. District Court....	George M. Bourquin.....	Butte.
U. S. District Attorney.....	Jas. W. Freeman	Great Falls.
Asst. U. S. District Attorney..	S. C. Ford.....	Helena.
Asst. U. S. District Attorney..	E. A. LaBoissiere.....	Helena.
Clerk U. S. District Court.....	George W. Sproule.....	Helena.
U. S. Marshal.....	Wm. Lindsay.....	Helena.
Master in Chancery.....	Oliver T. Crane.....	Helena.
Master in Chancery.....	C. N. Davidson.....	Butte.
Collector of Customs.....	John G. Bair.....	Great Falls.
Immigration Inspector.....	L. T. Plummer.....	Helena.
Assayer in charge U. S. Assay Office	T. B. Miller.....	Helena.
Surveyor General.....	Jerome B. Locke.....	Helena.
Collector of Internal Revenue..	S. N. Nicholson.....	Helena.
Section Director U. S. Weather Bureau	R. F. Young.....	Helena.
Dist. Eng. U. S. Geolog. Survey (water resources).....	W. A. Lamb.....	Helena.
Chief Clerk Ry. Mail Service..	George M. Fuller	Helena.
Supervising Eng. U. S. Reclamation Service.....	H. N. Savage.....	Helena.

TERMS OF COURT.

At Helena—First Mondays in April and November.
At Butte—First Tuesdays in February and September.
At Billings—First Mondays in March and August.
At Great Falls—First Mondays in May and October.
At Missoula—First Mondays in January and June.

U. S. LAND OFFICE OFFICIALS.

Register.	Receiver.	Land Office.
Stephen Carpenter.....	George O. Freeman.....	Helena.
F. W. Appleton.....	Walter H. Sales.....	Bozeman.
Albert Kircher.....	J. C. Auld	Miles City.
J. Shull.....	R. W. Kemp.....	Missoula.
F. O. Williams.....	J. R. Hillman.....	Kalispell.
Harry C. Kelly.....	A. Hogeland.....	Lewiston.
R. N. Sutherlin.....	Thos. Corbally	Great Falls.
Fred H. Foster.....	E. J. McLean.....	Billings.
T. M. Patten.....	W. Shanley	Glasgow.
M. W. Hutchinson.....	L. W. Pierson	Havre.

REFEREES IN BANKRUPTCY.

Referee.	Residence.
S. A. Balliet.....	Helena.
F. W. Haskins.....	Butte.
Charles A. Hills.....	Missoula.
A. H. Gray.....	Great Falls.
H. A. Frith.....	Billings.
J. E. Rockwood.....	Kalispell.
E. M. Niles.....	Livingston.

SUPERINTENDENTS OF INDIAN SCHOOLS IN MONTANA.

Arthur E. McFatridge.....	Supt. Blackfeet School	Browning.
Winfield W. Scott.....	Supt. Crow School.....	Crow Agency.
Fred C. Morgan.....	Supt. Flathead School.....	Jocko.
Horton H. Miller.....	Supt. Fort Belknap School.....	Harlem.
C. B. Lohmiller.....	Supt. Fort Peck School.....	Poplar.
John R. Eddy.....	Supt. Tongue River School	Lame Deer.

DIRECTORY OF STATE OFFICIALS.

CONGRESSIONAL DELEGATION.

Office.	Name and Residencee.	Term Expires.
United States Senator.....	Henry L. Myers, Hamilton.....	March 4, 1917.
United States Senator.....	T. J. Walsh, Helena.....	March 4, 1919.
Representative	Thomas Stout, Lewiston.....	March 4, 1915.
Representative	John M. Evans, Missoula.....	March 4, 1915.

STATE SENATORS.

Name.	Politics.	County.	Residence.
*Abbott, P. M.	Dem.	Gallatin	Three Forks.
*Asbridge, Jos. L.	Dem.	Musselshell	Roundup.
*Boardman, J. M.	Pro.	Dawson	Poplar.
*Burla, G. F.	Dem.	Big Horn	Hardin.
*Brownlee, Robt.	Rep.	Sweet Grass	Big Timber.
Burlingame, J. M.	Rep.	Cascade	Great Falls.
*Byrnes, Owen	Dem.	Lewis and Clark	Gould.
*Cato, O. C.	Dem.	Custer	Miles City.
Christopher, W. E.	Rep.	Sanders	Thompson.
*Darroch, J. M.	Dem.	Park	Livingston.
Dearborn, A. R.	Dem.	Granite	Philipsburg.
Donlan, Edward	Rep.	Missoula	Missoula.
Duncan, M. M.	Dem.	Madison	Virginia City.
Edwards, J. E.	Rep.	Rosebud	Forsyth.
Gallwey, H. A.	Dem.	Silver Bow	Butte.
George, W. B.	Dem.	Yellowstone	Billings.
*Grande, A. C.	Rep.	Meagher	Lennep.
Groff, H. C.	Dem.	Ravalli	Victor.
Larson, T. O.	Rep.	Teton	Choteau.
Leary, Jas. E.	Dem.	Lincoln	Libby.
Leighton, I. A.	Rep.	Jefferson	Boulder.
*MacKenzie, D. S.	Rep.	Hill	Havre.
*Minor, J. M.	Dem.	Deer Lodge	Anaconda.
Muffly, Chas.	Dem.	Broadwater	Winston.
*O'Shea, D. G.	Dem.	Carbon	Red Lodge.
Selway, E. O.	Rep.	Beaverhead	Dillon.
*Stevens, Geo. H.	Rep.	Chouteau	Ft. Benton.
Stout, Thos.	Dem.	Fergus	Lewistown.
Survant, John	Rep.	Valley	Malta.
*Taylor, L. B.	Pro.	Blaine	Chinook.
Whiteside, Fred.	Dem.	Flathead	Kalispell.
*Williams, Chas. H.	Rep.	Powell	Deer Lodge.

* Holdover Senators.

G. G. WATTS, Secretary.

HOUSE OF REPRESENTATIVES.

(Elected Nov. 6, 1912. Term of office, two years.

Name.	Politics.	County.	Residence.
Annin, J. B.	Pro.	Yellowstone	Columbus.
Blair, George A.	Pro.	Ravalli	Victor.
Blair, John W.	Rep.	Powell	Helmville.
Blake, Harold N.	Rep.	Deer Lodge	Anaconda.
Brower, Andrew J.	Rep.	Missoula	Ronan.
Burnett, Harvey	Dem.	Fergus	Giltedge.
Burns, James	Dem.	Cascade	St. Peters.
Camp, E. B.	Rep.	Yellowstone	Billings.
Carnal, F. A.	Pro.	Hill	Havre.
Carroll, Chas. P.	Dem.	Granite	Drummond.
Chrismas, Wm.	Dem.	Carbon	Joliet.
Clark, T. L.	Dem.	Teton	Sweet Grass.
Clay, Geo. W.	Rep.	Valley	Malta.
Collins, John	Pro.	Blaine	Harlem.
Conner, Chas. H.	Soc.	Lincoln	Eureka.
Cookingham, R. T.	Pro.	Valley	Malta.
Cramer, M. W.	Pro.	Yellowstone	Laurel.
Crippen, H. C.	Pro.	Yellowstone	Billings.
Crull, E. J.	Rep.	Musselshell	Roundup.
Cutts, William	Dem.	Silver Bow	Butte.
Davidson, John	Pro.	Rosebud	Lee.
Davis, John A.	Pro.	Valley	Plentywood.
Day, E. C.	Dem.	Lewis and Clark	Helena.
Doggett, Jeff	Rep.	Broadwater	Townsend.
Drinkard, Charles A.	Dem.	Fergus	Lewistown.
Durkan, Martin	Dem.	Cascade	Great Falls.
Eliel, Frank	Rep.	Beaverhead	Dillon.
Ellingson, Henry	Rep.	Carbon	Bear Creek.
Ezekiels, Mark	Dem.	Silver Bow	Butte.
Fishbaugh, L. M.	Dem.	Chouteau	Carter.
Fisher, Henry	Dem.	Lewis and Clark	Helena.
Gleason, John Q.	Dem.	Silver Bow	Butte.
Glenn, L. D.	Rep.	Meagher	Harlowton.
Gould, Mert	Dem.	Madison	Twin Bridges.
Graybeal, J. M.	Dem.	Gallatin	Bozeman.
Harmon, W. E.	Rep.	Gallatin	Bozeman.
Heinrich, F. M.	Dem.	Big Horn	Lodge Grass.
Henley, J. B.	Pro.	Missoula	Missoula.
Higgins, Ronald	Rep.	Missoula	Missoula.
Holt, Elmer	Dem.	Custer	Miles City.
Hough, W. H.	Rep.	Carbon	Bridger.
Huddleston, John	Dem.	Silver Bow	Butte.
Hustead W. D.	Dem.	Madison	Pony.
Jahreiss, John	Dem.	Silver Bow	Butte.
Jewell, John Jacob	Dem.	Fergus	Philbrook.
Johnson, Raymond R.	Dem.	Deer Lodge	Anaconda.
Jordan, A. L.	Pro.	Flathead	Columbia Falls.
Jordan, E. E.	Pro.	Dawson	Wibaux.
Kelly, W. H.	Dem.	Custer	Miles City.
Kemmis, Walter D.	Pro.	Dawson	Sidney.
Kiley, John	Dem.	Silver Bow	Butte.
King, W. R.	Dem.	Chouteau	Virgelle.
Kirschwing, Joseph	Dem.	Cascade	Great Falls.
Kuphal, F. W.	Dem.	Missoula	Missoula.
Largey, E. Creighton	Dem.	Silver Bow	Butte.
Lemon, Charles A.	Dem.	Deer Lodge	Anaconda.
Lovelace, John A.	Dem.	Park	Livingston.
McClung, Charles F.	Dem.	Park	Livingston.
McMahon, William J.	Dem.	Silver Bow	Butte.
McNally, James E.	Dem.	Silver Bow	Butte.
Macdonald, A. D.	Dem.	Flathead	Kalispell.
MacRae, Charles	Pro.	Ravalli	Woodside.
Mains, D. F.	Rep.	Teton	Valier.
Mayfield, H. T.	Pro.	Flathead	Whitefish.
Meadors, J. P.	Rep.	Dawson	Riverview.
Murphy, Dennis	Dem.	Silver Bow	Butte.
Murray, Frank C.	Dem.	Cascade	Great Falls.
Norton, Thomas J.	Dem.	Silver Bow	Butte.
Nye, W. N.	Rep.	Sweet Grass	Big Timber.
O'Neill, Frank D.	Dem.	Custer	Mizpah.
Phillips, Ira J.	Dem.	Fergus	Straw.
Pope, Joseph	Pro.	Yellowstone	Laurel.
Poulsson, W. C.	Rep.	Chouteau	Fort Benton.
Prescott, Clarence	Dem.	Missoula	Missoula.
Rhoades, W. B.	Dem.	Flathead	Kalispell.
Rowe, Wearn	Rep.	Chouteau	Fort Benton.
Sickler, A. R.	Dem.	Rosebud	Forsyth.
Smith, Hedley F.	Dem.	Lewis and Clark	Helena.
Spogen, Dominic	Dem.	Cascade	Belt.
Stewart, H. M.	Dem.	Gallatin	Bozeman.
Sullivan, M. J.	Dem.	Jefferson	Alhambra.
Sweet, E. A.	Dem.	Sanders	Dixon.
Tighe, W. J.	Rep.	Cascade	Great Falls.
Walker, Frank E.	Dem.	Silver Bow	Butte.
Word, William F.	Dem.	Lewis and Clark	Helena.
Working, Lincoln	Rep.	Lewis and Clark	Helena.

C. Z. POND, Chief Clerk.

ROSTER OF THE SENATE.

Office.	Name.
President	W. W. McDowell.
Secretary	G. G. Watts.
Assistant Secretary	Seth Maxwell.
Chaplain	Rev. I. N. Smith.
Sergeant-at-Arms	L. S. Butler.
Journal Clerk	D. E. Roarty.
Engrossing Clerk	Philip R. Long.
Enrolling Clerk	Charles Treacy.
Printing Clerk	John P. Martin.
Bill Clerk	Charles M. Howard.

ROSTER OF THE HOUSE.

Office.	Name.	County.
Speaker	A. D. MacDonald	Flathead.
Sergeant-at-Arms	George Van Fleet	Park.
Chief Clerk	Charles Z. Pond	Gallatin.
Chaplain	E. J. Stanley	Jefferson.
Assistant Chief Clerk	M. J. O'Leary	Lewis & Clark.
Reading Clerk	H. Gordon Bennett	Teton.
Journal Clerk	D. Oswald Cohan	Silver Bow.
Enrolling Clerk	William F. Hirsch	Fergus.
Engrossing Clerk	Anna McDonald	Silver Bow.
Bill Clerk	T. S. Garlow	Custer.

STATE OFFICIALS.

(The Postoffice Address of all State Officials is Helena.)

Office.	Name.	Residence.
Governor	Samuel V. Stewart	Virginia City.
Lieutenant Governor	W. W. McDowell	Butte.
Secretary of State	A. M. Alderson	Livingston.
Treasurer	W. C. Rae	Red Lodge.
Attorney General	D. M. Kelly	Boulder.
Auditor	William Keating	Missoula.
Supt. of Public Instruction	H. A. Davee	Lewistown.
Clerk of Supreme Court	John T. Athey	Great Falls.
Railroad Commissioner	Daniel Boyle	Livingston.
Railroad Commissioner	E. A. Morley	Butte.
Railroad Commissioner	John H. Hall	Great Falls.

NOTE:—Each officer is elected for four years, with the following exceptions: Clerk of the Supreme Court is elected for six years, the term of the present Clerk expiring January 1, 1916. The term of Railroad Commissioner Daniel Boyle will expire January 1, 1915; E. A. Morley, January 1, 1917, and John H. Hall, January 1, 1919.

STATE SUPREME COURT.

Name.	Position.	Elected.	Term Expires.
Theodore Brantley	Chief Justice	Nov. 8, 1010	Jan. 2, 1916
William L. Holloway	Associate Justice	Nov. 3, 1908	Jan. 4, 1915
Sidney Sanner	Associate Justice	Nov. 6, 1912	Jan. 1, 1919

Clerk of Supreme Court, John T. Athey.
Marshal of Supreme Court, M. W. Race.
Stenographer, A. C. Schneider.
Attendant, W. O. Craig.

OFFICERS APPOINTED BY THE GOVERNOR.

Office.	Name.	Appointed.	Term Expirese.
Private Sec. to the Governor..	Will Aiken	Jan. 6, 1913	Jan. 6, 1917
Stenographer to the Governor..	J. Albert Livingston	Jan. 6, 1913	Jan. 6, 1917
State Land Agent	C. A. Whipple	Jan. 4, 1911	Aug. 16, 1913
Register State Lands	Sidney Miller	Mar. 20, 1913	Mar. 20, 1917
Deputy Register State Lands...	Jos. Oker	Apr. 1, 1913	Apr. 1, 1917
State Forester	Charles Jüngberg	Dec. 23, 1909	Dec. 23, 1913
Commissioner Department of Agriculture and Publicity....	J M. Kennedy	Mar. 5, 1913	Mar. 5, 1917
Commissioner Department of Labor and Industry	W. J. Swindlehurst	Mar. 5, 1913	Mar. 5, 1917
State Tax Commissioner	George M. Houtz	Apr. 1, 1913	Apr. 1, 1919
Sec. State Highway Com	Geo. R. Metlen	Apr. 1, 1913	Apr. 1, 1918
Secretary Bureau of Child and Animal Protection	M. L. Rickman	Mar. 5, 1913	Mar. 5, 1917
State Examiner	H. S. Magraw	Mar. 4, 1913	Mar. 4, 1917
Veterinary Surgeon	W. J. Butler	Mar. 4, 1913	Mar. 4, 1917
Inspector of Mines	W. B. Orem	Mar. 4, 1913	Mar. 4, 1917
Deputy Inspector of Mines	D. J. McGrath	Mar. 4, 1913	Mar. 4, 1917
Coal Mine Inspector	J. B. McDermott	Dec. 9, 1909	Dec. 9, 1913
Boiler Inspector	Percy Brown	Mar. 4, 1913	Mar. 4, 1917
Assistant Boiler Inspector	R. A. Prater	Mar. 4, 1913	Mar. 4, 1917
Assistant Boiler Inspector	R. Moran	Feb. 18, 1910	Mar. 1, 1915
Assistant Boiler Inspector	Stephen Parker	Mar. 5, 1913	Mar. 5, 1917
Clerk to Boiler Inspector	W. Roy Seiger	Mar. 4, 1913	Mar. 4, 1917
Game and Fish Warden	J. L. DeHart	Mar. 26, 1913	Mar. 26, 1917
State Engineer	A. W. Mahon	Mar. 7, 1911	Mar. 7, 1915
State Parole Commissioner	J. E. Clifford	Apr. 1, 1913	Apr. 1, 1917
Clerk Consolidated Boards	J. J. Ryan	Mar. 4, 1913	Mar. 4, 1917
Warden of State Prison	Frank Conley	Feb. 14, 1913	Feb. 14, 1917
Superintendent State Asylum for the Insane	Dr. J. A. Knight	Mar. 18, 1913	Mar. 18, 1917
Assistant Superintendent State Asylum for the Insane	Dr. J. M. Ragsdale	Mar. 6, 1913	Mar. 6, 1917
Superintendent State Tuberculosis Sanitarium	Dr. Thos. T. Tuttle	Nov. 19, 1912	Nov. 19, 1916
State Dairy Commissioner	Arthur G. Sholes	Apr. 26, 1913	Apr. 1, 1917
Chief Grain Inspector	John E. Templeton	Apr. 17, 1913	May 1, 1917

DEPUTY STATE GAME AND FISH WARDENS.

Name.	Address.	Name.	Address.
D. H. Morgan, chief deputy...	Helena.	E. C. Carruth	Havre.
Peter Scharrenbroich	Helena.	W. D. Delphy	Great Falls.
B. F. Bowman	Plains.	J. A. Weaver	Lewistown.
Harry Morgan	Ovando.	T. A. Berkin	Lewistown.
J. C. Duffy	Philipsburg.	P. W. Nelson	Livingston.
J. W. Carney	Dillon.	T. J. Thompson	Forsyth.
Herman Bockman	Libby.	Charles Marrs	Jordan.
J. T. Moore	Choteau.	Geo. F. Burke	Glasgow.

DEPUTIES OF THE BUREAU OF CHILD AND ANIMAL PROTECTION.

Name.	Address.	Name.	Address.
Wylie Mountjoy (special dep.)..	Cardwell.	Will Cave	Missoula.
P. J. Gilligan	Butte.	S. W. Matlock	Billings.
L. K. Devlin	Havre.	J. C. Osborne	Great Falls.
Jaumes K. Lang	Kalispell.		

DEPUTY STATE VETERINARY SURGEONS.

Name.	Address.	Name.	Address.
E. D. Nash (chief deputy)....	Helena.	S. F. Griesemer	Helena.
A. H. Cheney	Miles City.	J. C. Boyd	Helena.
A. J. DuFrene	Glendive.	O. J. Johnson	Helena.
Z. C. Boyd	Chinook.	F. S. Gray	Helena.

EMPLOYES OF RAILROAD AND PUBLIC UTILITIES COMMISSIONS.

Office.	Name.
Secretary	R. F. McLaren.
Rate Clerk	O. W. Tong.
Inspector	S. W. Ross.
Auditor	F. E. Hoss.
Engineer	Oscar Reynolds.
Inspector of Navigation	Capt. N. A. Palmer.

ROSTER OF THE COMMISSIONED OFFICERS OF THE NATIONAL GUARD OF MONTANA

Commander-in-Chief and Staff.

(Governor Samuel V. Stewart, Commander-in-Chief.)

Name.	Office.
Brig. Gen. Phil. Greenan, Chief of Staff	Adjutant General.
Col. James T. Stanford	Inspector General.
Col. Stephen E. Atkinson	Quartermaster General.
D. S. K. Campbell	Surgeon General.
Major Jesse R. Roote	Judge Advocate General.
John V. Carroll, Jr.	Commissary General.
George F. Graham	Paymaster General.
Major A. N. Maxeiner	Chief of Ordnance.
Major Charles T. Sacket	Chief Engineer.
Capt. E. D. Porter	Chief Signal Officer.
Lieut. Col. Gerald Higgins	Aid-de-Camp.
Lieut. Col. Walter L. Verge	Aid-de-Camp.
Lieut. Col. Harry G. Wright	Aid-de-Camp.

STATE BOARD OF EXAMINERS.

Members.	Title.	Organization.
Samuel V. Stewart	Governor	President.
A. M. Alderson	Secretary of State	Secretary.
D. M. Kelly	Attorney General	Member.

Clerk of the Board, R. M. Hawkins.

STATE FURNISHING BOARD.

Members.	Title.	Organization.
Samuel V. Stewart	Governor	President.
A. M. Alderson	Secretary of State	Secretary.
D. M. Kelly	Attorney General	Member.

Clerk of the Board, R. M. Hawkins.

STATE BOARD OF EQUALIZATION.

Members.	Title.	Organization.
Samuel V. Stewart	Governor	President.
A. M. Alderson	Secretary of State	Secretary.
D. M. Kelly	Attorney General	Member.
W. C. Rae	Treasurer	Member.
William Keating	Auditor	Member.

Clerk of the Board, J. J. Ryan.

STATE BOARD OF LAND COMMISSIONERS.

Members.	Title.	Organization.
Samuel V. Stewart	Governor	President.
H. A. Davee	Supt. of Public Instruction	Secretary.
A. M. Alderson	Secretary of State	Member.
D. M. Kelly	Attorney General	Member.

Clerk of the Board, Mrs. E. B. Thompson.

STATE BOARD OF PARDONS.

Members.	Title.	Organization.
D M. Kelly	Attorney General	President.
A. M. Alderson	Secretary of State	Secretary.
William Keating	Auditor	Member.

Clerk of the Board, J. J. Ryan.

STATE BOARD OF PRISON COMMISSIONERS.

Members.	Title.	Organization.
Samuel V. Stewart	Governor	President.
A. M. Alderson	Secretary of State	Secretary.
D. M. Kelly	Attorney General	Member.

Clerk of the Board, J. J. Ryan.

STATE BOARD OF COMMISSIONERS FOR THE INSANE.

Members.	Title.	Organization.
Samuel V. Stewart	Governor	President.
A. M. Alderson	Secretary of State	Secretary.
D. M. Kelly	Attorney General	Member.

Clerk of the Board, J. J. Ryan.

CAREY LAND ACT BOARD.

Members.	Title.	Organization.
Samuel V. Stewart	Governor	President.
A. M. Alderson	Secretary of State	Secretary.
D. M. Kelly	Attorney General	Member.

Secretary, A. W. Mahon, State Engineer; Assistant Secretary, G. R. Davies.

STATE BOARD OF EDUCATION.

Members.	Organization.	Address.	Appointed.	Term Expires.
Samuel V. Stewart	President	Helena	Ex-Officio	Jan. 1, 1917.
D. M. Kelly	Atty. Gen.	Helena	Ex-Officio	Jan. 1, 1917.
H A. Davee	Secretary	Helena	Ex-Officio	Jan. 1, 1917.
Nathan R. Leonard	Member	Butte	Feb. 10, 1910	Feb. 1, 1914.
Charles H. Hall	Member	Missoula	Sept. 15, 1910.	Feb. 7, 1914.
O. W. McConnell	Member	Helena	July 5, 1911.	Feb. 1, 1915.
Ward H. Nye	Member	Billings	July 5, 1911.	Feb. 1, 1915.
S. D. Largent	Member	Great Falls	June 13, 1912.	Feb. 1, 1916.
Walter S. Hartman	Member	Bozeman	June 13, 1912.	Feb. 1, 1916.
John Dietrich	Member	Helena	May 1, 1913.	Feb. 1, 1917.
Joseph C. Smith	Member	Dillon	May 1, 1913.	Feb. 1, 1917.

STATE LAW LIBRARY BOARD OF TRUSTEES.

Members.	Organization.	Address.	Appointed.	Term Expires.
Theodore Brantley	President	Helena	Ex-Officio	Jan. 1, 1917.
Wm. L. Holloway	Member	Helena	Ex-Officio	Jan 1, 1915.
Sidney Sanner	Member	Helena	Ex-Officio	Jan. 1, 1919.
A. M. Alderson	Secretary	Helena	Ex-Officio	Jan. 1, 1917.
William Keating	Member	Helena	Ex-Officio	Jan. 1, 1917.

Librarian, A. K. Barbour.

STATE BOARD OF TEXT BOOK COMMISSIONERS.

Name.	Address.	Appointed.	Term Expires.
L. R. Foote	Dillon	Mar. 4, 1910	Mar. 7, 1915.
W. E. Harmon	Bozeman	Mar. 4, 1910	Mar. 7, 1915.
H. A. Davee	Lewistown	Mar. 4, 1910	Mar. 7, 1915.
C. V. Fulton	Butte	Mar. 6, 1912	Mar. 7, 1917.
W. K. Dwyer	Anaconda	Mar. 6, 1912	Mar. 7, 1917.
Ward H. Nye	Billings	Mar. 6, 1912	Mar. 7, 1917.
John Dietrich	Helena	Mar. 6, 1912	Mar. 7, 1917.

BOARD OF TRUSTEES OF THE STATE HISTORICAL SOCIETY.

Members.	Address.	Appointed.	Term Expires.
W. T. Pigott	Helena	Mar. 13, 1911	Mar. 26, 1913.
James U. Sanders	Helena	Mar. 13, 1911	Mar. 26, 1913.
Wesley M. Biggs	Helena	Mar. 13, 1911	Mar. 26, 1913.
Frank H. Woody	Missoula	Mar. 13, 1911	Mar. 26, 1913.
Lester S. Willson	Bozeman	Mar. 13, 1911	Mar. 26, 1913.

Librarian, W. Y. Pemberton; Asst. Librarian, F. A. Fortune; Asst. Librarian, Agnes Dickerson.

STATE BOARD OF PHARMACY.

Members.	Address.	Appointed.	Term Expires.
Emil Starz	Helena	April 7, 1911	Feb. 10, 1914
F. A. Scheuber*	Livingston	Jan. 14, 1913	Mar. 23, 1915
W. R. Montgomery	Butte	May 6, 1913	Mar. 25, 1916

*Secretary.

STATE BOARD OF MEDICAL EXAMINERS.

Members.	Address.	Appointed.	Term Expires.
Sidney A. Cooney	Helena	Mar. 16, 1907	Dec. 31, 1913
W. W. Andrus	Miles City	May 18, 1912	Mar. 27, 1915
P. H. McCarthy	Butte	Feb. 2, 1911	Sept. 26, 1916
William L. Renick	Butte	Feb. 10, 1910	Mar. 2, 1917
W. P. Mills	Missoula	Feb. 2, 1911	Feb. 10, 1918
Francis J. Adams	Great Falls	May 18, 1912	Feb. 10, 1919
W. C. Riddell*	Helena	April 1, 1913	Jan. 1, 1920

*Secretary.

STATE BOARD OF OSTEOPATHIC EXAMINERS.

Members.	Address.	Appointed.	Term Expires.
Asa Willard*	Missoula	April 2, 1912	May 13, 1915
Charles W. Mahaffay	Helena	April 2, 1913	Mar. 27, 1916
W. C. Dawes	Bozeman	Feb. 10, 1913	Feb. 10, 1917

*Secretary.

STATE BOARD OF DENTAL EXAMINERS.

Members.	Address.	Appointed.	Term Expires.
R. R. Rathbone	Dillon	June 9, 1910	April 5, 1914
R. C. Purdum	Bozeman	June 9, 1910	Feb. 10, 1915
G. E. Longeway	Great Falls	April 6, 1911	Mar. 27, 1916
T. M. Hampton	Helena	Aug. 8, 1912	June 23, 1917
G. A. Chevigny*	Butte	May 6, 1913	Mar. 2, 1918

*Secretary.

STATE BOARD OF HEALTH.

Members.	Address.	Appointed.	Term Expires.
Samuel V. Stewart	Helena	Ex-Officio	Jan. 1, 1917
D. M. Kelly	Helena	Ex-Officio	Jan. 1, 1917
W. J. Butler	Helena	Ex-Officio	Mar. 4, 1917
C. E. K. Vidal	Great Falls	Jan. 29, 1912	Mar. 7, 1915
Edwin F. Maginn	Butte	May 2, 1913	Jan. 1, 1917
D. J. Donohue	Glendive	May 2, 1913	Jan. 1, 1917

Secretary: W. F. Cogswell.

STATE BOARD OF EXAMINERS FOR NURSES.

Members.	Address.	Appointed.	Term Expires.
Mrs. George N. Bennett	Butte	May 19, 1913	May 5, 1914
Miss Florence Aimes	Billings	May 5, 1913	May 5, 1915
Miss Hargaret M. Hughes	Helena	May 5, 1913	May 5, 1915
Miss Lucy Marshall	Missoula	May 5, 1913	May 5, 1916
Miss Ruby Bohart	Bozeman	May 5, 1913	May 5, 1916

STATE FISH COMMISSION.

Members.	Address.	Appointed.	Term Expires.
J. L. DeHart	Helena	Ex-Officio	
George E. Doll*	Helena	Mar. 2, 1911	Mar. 13, 1915
W. M. Bickford	Missoula	Mar. 2, 1911	Mar. 13, 1915
E. P. Mathewson	Anaconda	May 10, 1913	Mar. 13, 1917
M. D. Baldwin	Flathead	May 10, 1913	Mar. 13, 1917

*Secretary.
H. D. Dean, Director State Fish Hatchery, Anaconda.

LIVESTOCK SANITARY BOARD.

Name.	Organization.	Address.
D. J. Donohue	Chairman	Glendive
T. C. Power	Vice Chairman	Helena
H. H. Sappington	Member	Sappington
W. J. Butler	Secretary Ex-Officio	Helena

STATE BOARD OF POULTRY HUSBANDRY.

Members.	Address.	Appointed.	Term Expires.
Amos C. Hall	Virginia City	May 2, 1913	May 2, 1914
John Rees	Anaconda	May 12, 1913	May 2, 1915

STATE HIGHWAY COMMISSION.

Members.	Address.	Appointed.
A. W. Mahon	Helena	Ex-Officio
Robert D. Kneale	Bozeman	Ex-Officio
George R. Metlen, Secretary	Dillon	Mar. 25, 1913

STATE ATHLETIC COMMISSION.

Members.	Address.	Appointed.	Term Expires.
John F. Davies	Butte	April 14, 1913	April 15, 1918
Dr. S. A. Cooney	Helena	April 14, 1913	April 15, 1918
Joseph L. Markham	Billings	April 14, 1913	April 15, 1918

Secretary: W. F. McGrath, Butte.

STATE BOARD OF HORTICULTURE.

Members.	Address.	Appointed.	Term Expires.
Samuel V. Stewart	Helena	Ex-Officio	Mar. 10, 1914
W. J. Tiedt	Darby	Mar. 4, 1910	Mar. 10, 1914
Allen Pierse	Great Falls	Mar. 11, 1910	Mar. 10, 1915
W. J. Crismas	Joliet	Mar. 10, 1911	Mar. 10, 1915
C. C. Willis	Plains	Mar. 10, 1911	Mar. 10, 1915
J. C. Wood	Bigfork	Mar. 10, 1911	Mar. 10, 1915
George R. Brown	Missoula	April 24, 1913	Mar. 10, 1915
T. T. Black	Whitehall	April 24, 1913	Mar. 10, 1917

Secretary: M. L. Dean, Missoula.

BOARD OF MANAGERS OF THE STATE SOLDIERS' HOME.

Members.	Address.	Appointed.	Term Expires.
W. H. Campbell	Kalispell	Nov. 16, 1911	Mar. 16, 1915
Charles S. Warren	Butte	Nov. 19, 1912	April 18, 1915
Martin Maginnis	Helena	April 24, 1913	April 18, 1917
Al. Ingraham	Columbia Falls	April 24, 1913	April 17, 1917

Department Commander G. A. R. (ex-officio).
Commandant at the Home: J. E. Sprague.

STATE BOARD OF CHARITIES AND REFORM.

Members.	Address.	Appointed.	Term Expires.
Rev. W. W. VanOrsdel	Great Falls	Mar. 16, 1911	Mar. 2, 1915
Rev. James F. McNamee	Helena	Mar. 16, 1911	Mar. 2, 1917
Rev. D. B. Price*	Helena	May 10, 1913	Mar. 2, 1919

*Secretary.

STATE BOARD OF STOCK COMMISSIONERS.

County.	Name.	P. O. Address.
Beaverhead	Edward B. Roe	Red Rock
Big Horn		
Blaine	Matthew McAdams	Cleveland
Broadwater	Con. Sweeney	Winston
Carbon	Herman Kuhl	Luther
Cascade	William B. Taylor	Cascade
Chouteau	John Harris	Fort Benton
Custer	E. B. Holt	Miles City
Dawson	C. J. Murphy	Glendive
Deer Lodge	B. F. Notestine	Stuart
Fergus	E. C. Abbott	Gilt Edge
Flathead	John Herman	Dayton
Gallatin	H. H. Sappington	Sappington
Granite	John W. Duffy	Philipsburg
Hill	E. T. Broadwater	Havre
Jefferson	Edward Ryan	Boulder
Lewis and Clark	John Burke	Augusta
Lincoln	Herman Bockman Sr.	Libby
Madison	L. C. Edwards	Sheridan
Meagher	James L. Johnston	White Sulphur Springs
Missoula	John E. Cyr	Missoula
Musselshell	William Spidell	Roundup
Park	Bert Armstrong	Livingston
Powell	Joseph Toomey	Deer Lodge
Ravalli	A. S. Groff	Corvallis
Rosebud	N. J. Humphreys	Birney
Sanders	George Helterline	Plains
Sheridan		
Silver Bow	J. W. Kenny	Melrose
Stillwater		
Sweet Grass	Wallis Huidekoper	Wallis
Teton	P. H. Crossen	Choteau
Valley	Judson D. Matkins	Redstone
Yellowstone	Charles O'Donnell	Billings

President: H. H. Sappington.
Secretary: D. W. Raymond.

STATE BOARD OF SHEEP COMMISSIONERS.

County.	Name.	P. O. Address.
Beaverhead	George Edinger	Dillon
Big Horn	G. F. Corwin	Foster
Blaine	F. M. Carr	Cleveland
Broadwater	Dan B. Filson	Winston
Carbor	Charles Ingram	Bowler
Cascade	J. E. Marcum	Cascade
Chouteau	Dr. John V. Carroll	Fort Benton
Custer	James Monroe	Ekalaka
Dawson	John A. Woodson	Miles City
Deer Lodge	Robert Fisher	Anaconda
Fergus	B. C. White	Buffalo
Flathead		
Gallatin	John Crowley	Logan
Granite	Alex. Wight	Hall
Hill	Walter Brown	Box Elder
Jefferson	E. J. Stanley	Whitehall
Lewis and Clark	Mark H. Heaney	Canyon Creek
Lincoln	M. Kolln	Eureka
Madison	Frank Swartz	Twin Bridges
Meagher	Richard Manger	White Sulphur Springs
Missoula	J. P. McClain	Calrton
Musselshell	William V. Lewis	Clara
Park	Lester Work	Livingston
Powell	William Williams	Deer Lodge
Ravalli	W. A. McElroy	Hamilton
Rosebud	T. E. Hammond	Forsyth
Sanders	Charles Larson	Dixon
Sheridan		
Silver Bow	Jerry J. Flannigan	Butte
Stillwater		
Sweet Grass	Harvey Coit	Big Timber
Teton	James Johnson	Shelby
Valley	Gordon R. Jamieson	Glasgow
Yellowstone	Thomas Snidow	Billings

President: T. C. Power.
Secretary: George J. Joyce.

EXECUTIVE BOARD OF MONTANA STATE COLLEGE.

Bozeman.

(James M. Hamilton, President.)

Name.	Residence.	Term Expires.
James M. Hamilton (Ch'rm'n).	Bozeman	Ex-Officio
J. H. Baker	Bozeman	Apr. 19, 1915
W. S. Davidson	Bozeman	Apr. 19, 1915

George Cox, Treasurer.
George Callaway, Secretary.

EXECUTIVE BOARD OF UNIVERSITY OF MONTANA.

Missoula.

(E. B. Craighead, President.)

Name.	Residence.	Term Expires.
E. B. Craighead (Chairman)	Missoula	Ex-Officio
J. M. Keith	Missoula	April 19, 1915
J. H. T. Ryman	Missoula	April 19, 1913

J. D. Dunlop, Secretary.

EXECUTIVE BOARD OF MONTANA STATE NORMAL COLLEGE.

Dillon.

(Joseph E. Monroe, President.)

Name.	Residence.	Term Expires.
Joseph E. Monroe (Chairman and Treasurer)	Dillon	Ex-Officio
R. R. Rathbone	Dillon	April 19, 1915
R. W. Boone	Dillon	April 19, 1915

EXECUTIVE BOARD OF THE STATE SCHOOL OF MINES.

Butte.

(C. H. Bowman, President.)

Name.	Residence.	Term Expires.
C. H. Bowman	Butte	Ex-Officio
B. H. Dunshee	Butte	April 19, 1915
Oscar Rohn	Butte	April 19, 1917

EXECUTIVE BOARD OF MONTANA SCHOOL FOR THE DEAF AND THE BLIND.

Boulder.

(H. J. Menzemer, President.)

Name.	Residence.	Term Expires.
H. J. Menzemer (Chairman)	Boulder	Ex-Officio
M. H. Parker	Boulder	April 19, 1915
L. Q. Skelton	Boulder	April 19, 1915

EXECUTIVE BOARD OF THE STATE ORPHANS' HOME.

Twin Bridges.
(Waller Shobe, President.)

Name.	Residence.	Term Expires.
Waller Shobe (Chairman)	Twin Bridges	Ex-Officio
Pat Carney	Waterloo	April 19, 1915
Almon J. Wilcomb	Twin Bridges	April 19, 1915

EXECUTIVE BOARD OF MONTANA STATE REFORM SCHOOL.

Miles City.
(H. W. George, President.)

Name.	Residence.	Term Expires.
H. W. George (Chairman)	Miles City	Ex-Officio
C. W. Butler	Miles City	May 7, 1915
A. Buchanan	Miles City	April 19, 1917

DISTRICT JUDGES.

District.	Judge.	Chambers.	Counties.
First	J. M. Clements (D.)	Helena	Lewis & Clark.
First	J. Miller Smith (R.)	Helena	Lewis & Clark.
Second	John B. McClernan (D.)	Butte	Silver Bow.
Second	Michael Dolan (D.)	Butte	Silver Bow.
Second	Jeremiah J. Lynch (D.)	Butte	Silver Bow.
Third	George B. Winston (R.)	Anaconda	Deer Lodge, Granite, Powell.
Fourth	Asa L. Duncan (D.)	Missoula	Missoula, Ravalli, Sanders.
Fourth	R. Lee McCulloch (D.)	Hamilton	Missoula, Ravalli, Sanders.
Fourth	J. E. Patterson (D.)	Thompson	Missoula, Ravalli, Sanders.
Fifth	Jos. B. Poindexter (D.)	Dillon	Beaverhead, Jefferson, Madison.
Fifth	William A. Clark (D.)	Virginia City	Beaverhead, Jefferson, Madison.
Sixth	A. P. Stark (R.)	Livingston	Park, Sweet Grass.
Seventh	C. C. Hurley (D.)	Miles City	Custer, Dawson.
Eighth	J. B. Leslie (D.)	Great Falls	Cascade, Teton.
Eighth	H. H. Ewing (D.)	Great Falls	Cascade, Teton.
Ninth	Ben B. Law (D.)	Bozeman	Gallatin.
Tenth	Roy E. Ayers (D.)	Lewistown	Fergus.
Eleventh	J. E. Erickson (D.)	Kalispell	Flathead, Lincoln.
Twelfth	J. W. Tattan (D.)	Fort Benton	Blaine, Chouteau, Hill, Sheridan, Valley.
Twelfth	Frank N. Utter (P.)	Glasgow	Blaine, Chouteau, Hill, Sheridan, Valley.
Thirteenth	Geo. W. Pierson (D.)	Billings	Big Horn, Carbon, Mussellshell Rosebud, Stillwater and Yellowstone.
Thirteenth	Charles L. Crum (R.)	Forsyth	
Fourteenth	J. A. Matthews (D.)	Townsend	Broadwater and Meagher.

COUNTY OFFICIALS.

County.	County Seat.	Class.	Sheriff.	Treasurer.	Clerk and Recorder.
Beaverhead ...	Dillon	5th	Daniel V. Erwin (R.).....	Fred Rife (D.)	Jay S. Baker (R.).
Big Horn.....	Hardin	7th	Dewey Riddle	Walter Hammer	Fred G. Miller.
Blaine	Chinook	6th	I. A. Neibaur (R.).....	D. C. Kenyon (P.).....	Vernon Butler (P.).
Broadwater ...	Townsend	7th	C. B. Doggett (D.).....	B. Williams (D.).....	Wm. Ragen (D.).
Carbon	Red Lodge.....	6th	W. H. Gebo (R.).....	J. E. Deegan (R.).....	R. A. Flinn (D.).
Cascade*	Great Falls....	2nd	Louis H. Kommers (R.).....	D. M. Wood (D.).....	Lee Dennis (R.).
Chouteau	Fort Benton...	5th	I. M. Rogers (D.).....	W. R. Leet (P.).....	J. Lee Sedgwick (R.).
Custer*	Miles City.....	3rd	Hugh R. Wells (D.).....	Thos. Butler (D.).....	Otis C. Haynes (R.).
Dawson	Glendive	5th	J. D. Wynn (D.).....	L. R. Barnett (R.).....	R. L. Wyman (R.).
Deer Lodge....	Anaconda	5th	Myles Kelly (D.).....	Jas. H. Murphy (D.).....	Ray Reardon (D.).
Fergus*	Lewistown	3rd	Firmin Tullock (D.).....	Rufus G. Poland (D.).....	F. R. Cunningham (D.).
Flathead	Kalispell	5th	A. J. Ingraham (D.).....	John R. Thompson (P.).....	Fred S. Perry (D.).
Gallatin	Bozeman	4th	W. S. Evans (D.).....	Chas. S. Ruffner (D.).....	E. H. Schumacher (R.).
Granite	Phillipsburg ...	7th	D. A. McLeod (D.).....	T. N. Brogan (D.).....	F. E. Wileman (R.).
Hill	Havre	6th	H. E. Loranger (D.).....	Roy H. Fuller (R.).....	J. H. Devine (D.).
Jefferson	Boulder	6th	P. J. Manning (D.).....	Cornelius Smith (D.).....	H. R. Houghton (R.).
Lewis & Clark*	Helena	2nd	Rolla Duncan (R.).....	Stephen Sullivan (R.).....	A. J. Duncan (D.).
Lincoln	Libby	6th	F. R. Baney (D.).....	John C. Friend (I.).....	Samuel Carpenter (R.).
Madison	Virginia City..	6th	Elijah Adams (D.).....	E. M. Smith (D.).....	Warren H. Thomas (R.).
Meagher	White Sul. Spgs	5th	Robt. Menzies (R.).....	Oscar Skeen (R.).....	Geo. Fowlie (D.).
Missoula*	Missoula	3rd	Wm. L. Kelly (D.).....	John W. Hicklin (D.).....	W. J. Babbington (D.).
Musselshell	Roundup	6th	J. L. Fisco (D.).....	E. B. Carter (R.).....	F. E. Renshaw (R.).
Park	Livingston	5th	John Killorn (D.).....	Fred M. Jelde (D.).....	John O'Leary (D.).
Powell	Deer Lodge....	6th	J. E. Neville	Albert Bien	Warren E. Evans.
Ravalli	Hamilton	6th	George See (D.)	H. L. Hart (R.).....	Albert J. Hork (P.).
Rosebud	Forsyth	4th	William Moses (D.).....	R. W. Blakesley (R.).....	Robert J. Cole (R.).
Sanders	Thompson	7th	Wm. Moser (D.).....	Robert Iff (R.).....	Frank Foster (D.).
Silver Bow*....	Butte	1st	Timothy Driscoll (D.).....	M. J. Sheehan (D.).....	Dave Kehoe (D.).
Sweet Grass...	Big Timber....	6th	Oscar A. Fallang (R.).....	Ralph Jarrett (R.).....	F. R. Hickman (D.).
Teton	Choteau	5th	Kenneth McKenzie (R.).....	E. D. Forrest (D.).....	E. C. Garrett (R.).
Valley	Glasgow	5th	Patrick Macey (P.).....	J. C. Duncan (R.).....	J. W. Dale (P.).
Yellowstone* ..	Billings	2nd	J. C. Orrick (R.).....	Fred Inabit (P.).....	F. E. Williams (R.).

*Cascade, F. C. Roosevelt (R.), Auditor.
*Custer, A. H. Swerdfiger (P.), Auditor.
*Fergus, E. P. Durnon (D.), Auditor.
*Lewis & Clark, Frank P. Sterling (R.), Auditor.
*Missoula, Thos. G. Hathaway, Jr. (R.), Auditor.
*Silver Bow, James Kane (D.), Auditor.
*Yellowstone, J. F. Sleeper (R.), Auditor.

COUNTY OFFICIALS—(Continued.)

County	Assessor.	Clerk of District Court.	Attorney.	Supt. of Schools.	Coroner.
Beaverhead ...	Norman E. Holden (R.).	Chas. W. Conger (R.)..	R. S. Stephenson (R.)..	Margaret Ross (R.).....	Dr. L. C. Ford, Sr. (R.).
Big Horn.....	A. H. Roush	Frank A. Nolan.....	C. F. Gillette.....	Bernice Meyers	O. Haverfield.
Blaine	Arthur Lewis (P.).....	A. W. Zelbarth (D.)....	D. L. Blackstone (P.)...	Avy L. Short (P.).....	D. A. Ring (D.).
Broadwater ...	M. L. Cavanaugh (D.)..	Fred Bubser (D.).....	John A. Matthews (D.)..	Lizzie Barker (R.).....	J. S. Connors (D.).
Carbon	Wm. Nelson (R.).....	H. A. Simmons (R.)....	F. P. Whicher (R.).....	Nora Hogan (R.).....	R. B. Mooney (R.).
Cascade	J. L. Gillin, Jr. (D.)....	Geo. Harper (D.).....	W. H. Meigs (R.).....	Annie McAnelly (D.)....	Dr. J. H. Irwin (R.).
Chouteau	E. L. Crane (R.).....	Geo. D. Patterson (R.)..	H. S. McGinley (D.)....	May Flanagan (R.).....	Fred Willford (R.).
Custer	Geo. E. Robbins (P.)...	Jas C. Ramsay (D.).....	Carl R. Tisor (R.).....	Emma R. Fritz (P.)....	J. B. Hawkins (P.).
Dawson	C. F. Bean (R.).....	H. A. Sample (R.).....	J. A. Slattery (D.).....	Harriet Kelly (D.).....	Carl A. Kinney (R.).
Deer Lodge....	H. S. Neal (R.).....	M. L. McDermott (D.)..	T. P. Stewart (R.).....	Mable Sharp (D.).....	Harry Ford (R.).
Fergus	M. Gurnett (D.).....	Jas. L. Martin (D.)....	Chas. J. Marshall (D.)..	Alice O'Hara (R.).....	Geo. R. Creel (P.).
Flathead	Dave Creig (D.).....	Sam D. McNeely (P.)...	X. K. Stout (D.).....	May Trumper (R.).....	J. E. Waggoner (P.).
Gallatin	R. W. Harwood (D.)....	Wm. Hays (D.).....	Justin M. Smith (R.)....	Ida Davis (D.).....	A. D. Brewer (D.).
Granite	W. E. Albright (P.).....	W. B. Calhoun (R.).....	D. M. Durfee (D.).....	L. P. Irvine (R.).....	W. E. Casey (P.).
Hill	Jas. Fenton (R.).....	Geo. W. Glass (P.).....	Victor R. Griggs (R.)...	Sarah F. McHale (R.)..	J. A. Sanderson (R.).
Jefferson	Jas. H. Mitchell (D.)...	W. B. Hundley (D.)....	J. E. Kelly (D.).....	Mabel Haynes (R.).....	Andrew Less (D.).
Lewis & Clark.	Chas. H. Martien (D.)..	Frank L. Reece (R.)....	A. H. McConnell (D.)..	Eva Harrington (D.)....	B. V. McCabe (R.).
Lincoln	John B. Weir (D.).....	Timothy Miller (D.).....	Jas. M. Blackford (D.)..	Forrest D. Head (S.)....	H. M. Gompf (R.).
Madison	Harden C. Vinson (D.)..	Matt Carey (D.).....	Geo. R. Allen (R.).....	Phebe C. Williams (R.)..	John O. Gorman (D.).
Meagher	J. H. Stewart (D.).....	F. H. Mayn (R.).....	C. A. Linn (R.).....	Mary J. Davies (R.)....	Grover C. Perkins (D.).
Missoula	Dan B. Currie (D.).....	Thos. P. Conlon (D.)....	Dan J. Heyfron (D.)....	Edna O. Reinhard (R.)..	Chas. H. Marsh (R.).
Musselshell	K. E. Park (I.)...	W. G. Jarratt (R.).....	G. J. Jeffries (R.).....	Maud Griffin (R.).....	T. S. O'Connor (R.).
Park	Geo. Colpitts (R.).....	Wm. Pethybridge (R.)..	Vard Smith (D.).....	Maud E. Brown (D.)....	F. O. Vicars (R.).
Powell	Martin Gleeson	Robert Medtlyng	T. F. Shea.....	Olga Johnson	Harry Peterson.
Ravalli	F. B. Tanner (R.).....	J. T. Coughenour, Jr.(P.)	James D. Taylor (R.)..	Nora Smithey (D.).....	R. W. Getty (P.).
Rosebud	Henry Grierson (R.)....	D. J. Muri (R.).....	Henry V. Beeman (D.)..	Fay Alderson (D.).....	F. M. Booth (R.).
Sanders	Wm. P. Meany (D.)....	Wm. Strom (D.).....	Gerald Young (D.).....	Leona C. Duncan (D.)..	D. H. Billmeyer (D.).
Silver Bow.....	P. S. Sullivan (D.).....	J. J. Foley (D.).....	Jos. J. McCaffery (D.)..	Ella Crowley (D.).....	Dan Drew (D.).
Sweet Grass...	D. J. Walwood	H. C. Pound (R.).....	R. S Steiner (D.).....	Jessie F. Evans (R.)....	J. A. Lowny (R.).
Teton	James S. Innes (D.)....	James Gibson (R.).....	D. W. Doyle (R.).....	Nellie R. Brown (D.)....	W. A. Hulbush (R.).
Valley	James Fox (P.).....	Walter Spanley (P.). .	John Slattery (P.).....	Flora Sims (R.).....	C. E. Peterson (P.).
Yellowstone ...	A. P. Smith (R.).....	L. T. Jones (R.).....	R. C. Stong (R.).....	Sara E. Morse (R.).....	G. H. Smith (R.).

County.	Surveyor.	Commissioner. Two Years.	Commissioner. Four Years.	Commissioner. Six Years.	Public Administrator.
Beaverhead ...	William J. George (R.)..	H. C. Patterson (R.)....	Chas. W. Francis (R.)..	Theodore Nelson (D.)....	William T. Scully (R.).
Big Horn.....	J. E. Graham	A. H. Bowman	B. F. Hertzler.....	Dan Sullivan	James Keane.
Blaine	A. G. Middleton (P.)....	Robt. E. M. Kennedy(P.)	Thos. Dowen (D.).....	Chas. A. Ross (P.).....	J. F. McCarthy (P.).
Broadwater ...	W. G. Kirscher (D.)....	John Hines, Sr. (D.)....	Hugh Broderick (D.)....	Arthur Williams (R.)....	Jas. L. Moore (D.).
Carbon	C. A. Gibson (R.).....	R. S. Chappell (R.).....	A. A. Ellis (R.).....	M. G. Roysdon (R.).....	M. J. Keckler (R.).
Cascade	Ben C. Johnston (R.)...	Pat Johnson (D.).....	Thos. Curry (R.).....	K. B. McIver (D.).....	Thomas Ashton (R.).
Chouteau	John Culbertson (D.)....	Jurgen Engellant (R.)..	Frank McGowan (D.)...	G. Impsen (R.).....	W. O. Dexter (R.).
Custer	Harry E. Fearnall (P.)..	R. T. Funish (D.).....	Chas. Daley (R.).....	Robert Yokley (D.).....	John E. DeCarle (P.).
Dawson	R. T. Hurdle (R.).....	W. K. Adams (R.).....	L. C. Fallerneeyer (D.)..	Andrew Larson (D.)....	E. C. Andrews (P.).
Deer Lodge....	E. A. Cralle (D.).....	W. J. Johnson (D.).....	B. B. Mahan (R.).....	D. R. Roach (D.).....	R. D. Croswhite (D.).
Fergus	J. E. Miller (D.).....	J. M. Parrent (D.).. ..	Jos. Gallagher (R.).....	Chas. B. Allen (D.).....	C. W. Buntin (D.).
Flathead	Harry P. Walters (R.)..	Jos. A. Edge (D.).....	Henry Good (D.).....	John Laux (D.).....	Floyd Reinking (D.).
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